SUBURBAN REVISIONS

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By

Alyssa Shank Durden

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SUBURBAN REVISIONS

Approved by:

Richard Dagenhart, Advisor
College of Architecture

Michael Dobbins
College of Architecture

Michael Gamble
College of Architecture

Date Approved: May 16, 2005

to my grandmother, Mary Ellen Shank,
who inspired me to write and encouraged me to draw since I was little,
and gave me the gift of education and unconditional love to see me through.
I would not be where I am without you - don’t forget.

ACKNOWLEDGEMENT

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SUMMARY

The Atlanta Region is largely composed of low-density, auto-oriented development, particularly in second generation suburbs developed just outside Atlanta's perimeter interstate since 1970. Of these suburbs, Gwinnett County has been the fastest growing county in Georgia since the 1970's up until a recent shift in growth to counties beyond its boundaries. This shift created a situation for Gwinnett County in which Atlantans are attracted outside its boundaries to new development as well as back to the city, for which it once served as a bedroom community, as Atlanta experiences resurgence. The county finds itself between these two forces of change, which provides an opportunity and need for Gwinnett to reinvent itself.

The Gwinnett County situation can be explained in terms of three problems. First there is the problem of abandoned strips. Gwinnett County's development has been guided by national and state highway development. The result is a pattern of roads, or strips, which intersect the highways. As new strips develop, old strips decline leaving abandoned shopping centers. The second problem is a demographic one. As new development continues to move north in Gwinnett and out of the county, middle class residents, for which existing auto-oriented suburbs were created, move as well. A new, poorer and more ethnically diverse population inherited the auto-oriented landscape of the fleeing middle class. This phenomenon is particularly concentrated along the southern portion of the Buford Highway corridor, which extends up from DeKalb County. The DeKalb County portion of Buford Highway has the strongest concentration of both Hispanic and Asian communities in the Atlanta Region; therefore, it appears that this population continues to grow along the corridor. The problem is one of segregation among polarities: white/hispanic, rich/poor, driver/pedestrian. Those with more money move closer to new development, while those with less money have less choice and are

found near declining strips with fewer services, poorer quality housing and lower quality of life. The third problem Gwinnett County defined for itself. County officials have expressed a desire for defining "the epicenter of Gwinnett." Meanwhile, Gwinnett's cities create plans for "town centers" to create identity in cities that were historically rural railroad towns, which became bedroom suburbs for Atlanta, and have now evolved into places where residents want to belong to a town and not just subdivisions. These new "town centers" are an expression of a need for place in a placeless culture. This need is repeatedly answered blindly with the aesthetics of New Urbanism, but often without the framework, and possibly without inquiry. I propose that there is no one "center" of Gwinnett, but a series of places defined by memory, design, events or rituals that take place there. Using theories of Landscape Urbanism, I propose to improve the situation of these three problems with a design intervention that connects existing New Urbanist and Everyday places to improve quality of life in Gwinnett County. This connective piece will serve as a social condenser in lieu of a center, provide links between polar populations, and reactivate declining strips.

INTRODUCTION

In this thesis titled “Suburban Revisions” I am investigating the adaptive reuse of suburban frameworks and developing a proposition for the appropriate next layer of infrastructure to accommodate a new culture of inhabitants. Until recently, the suburban realm has been avoided by urban designers, thus leaving its development guided by generic land use policy and the bottom line of private, for-profit developers. Those that have considered suburbia in urban design theory, such as Rem Koolhaas, and Howard Kunstler, primarily criticize suburbia for being non-urban, auto-dependent and “sprawling.” However, in this thesis, I ask that one suspend all preconceptions of suburbia, and see it for what it really is, a type within the American landscape with its own evolution, independent from cities, and driven by a different set of forces.

The American Heritage Dictionary defines “suburban” as “of, relating to, or characteristic of the culture, customs, and manners typical of life in the suburbs.”[1] This open ended definition may evoke a typical image of a generic landscape as viewed from an airplane: identical tract houses lining dendritic street patterns twisting across the landscape, connecting cul-de-sacs to arterial streets, or we might picture a white soccer mom stuck in traffic in her SUV on the way to the mall. Granted this is indeed what we observe when we take off or land in any city anywhere in the county, and the Mall of Georgia does in fact use almost all of its parking spaces on a busy holiday shopping weekend. However, if we take this definition for face value, and if we dissect the evolution of this generic landscape, we begin to see evidence of former ways of life, of cultures that came before, and thus can imagine the possibility of a new landscape and new “typical life in the suburbs” that represents a new culture of suburbanites.

[1] The American Heritage® Dictionary of the English Language, Fourth Edition

The word “revisions” or “revise” means “to reconsider and change or modify”[2] as one would with a text. If we think of the suburban landscape as a text, we find that the culture of each era of suburban development left documentation of their values, policies and way of life in the form of transportation networks and other infrastructure, such as Main Streets, squares, public or semi-public buildings and places. While the evidence of most of the everyday life of individuals of every era gets erased by the following era, the infrastructure investments of each era are adaptively reused and remain to tell the story. Therefore, we should not be overly concerned with the vinyl-sided tract houses or strip retail that line the arterials. These are merely temporary and are serving the needs of recent culture. What is more important is the design of the infrastructure we create. The blocks, streets, public spaces, public buildings and transportation networks we create will be used and reused for generations to come; therefore, these must be designed to accommodate a variety of cultures and anticipate new ways of life instead of limiting them as current auto-oriented development does.

The Atlanta region is largely composed of low-density, auto-oriented development, particularly in second generation suburbs developed just outside Atlanta's perimeter interstate since 1970. Of these suburbs, Gwinnett County, located just beyond Atlanta’s perimeter as illustrated in Figure 1, has been one of the fastest growing counties in Georgia since the 1970's up until a recent shift in growth to counties beyond its boundaries; therefore, Gwinnett County will be used as a case study for this thesis. This shift created a situation for Gwinnett County in which Atlantans are attracted outside its boundaries to new development as well as back to the city, for which it once served as a bedroom community, as Atlanta experiences resurgence. The county finds

[2] The American Heritage® Dictionary of the English Language, Fourth Edition Copyright © 2000 by Houghton Mifflin Company.

itself between these two forces of change, which provides an opportunity and need for Gwinnett to reinvent itself.

Figure 1 Location of Gwinnett County
(Image Source: Gwinnett County Chamber of Commerce)

The Gwinnett County situation can be explained in terms of three problems. First there is the problem of abandoned strips. Gwinnett County's development has been guided by national and state highway development. The result is a pattern of roads, or strips, which intersect the highways. As new strips develop, old strips decline leaving abandoned shopping centers. The second problem is a demographic one. As new development continues to move north in Gwinnett and out of the county, middle class residents, for which existing auto-oriented suburbs were created, move as well. A new, poorer and more ethnically diverse population inherited the auto-oriented landscape of the fleeing middle class. This phenomenon is particularly concentrated along the southern portion of the Buford Highway corridor, which extends up from DeKalb County. The DeKalb County portion of Buford Highway has the strongest concentration of both Hispanic and Asian communities in the Atlanta Region; therefore, it appears that this population continues to grow along the corridor. The problem is one of segregation among polarities: white/hispanic, rich/poor, driver/pedestrian. Those with more money move closer to new development, while those with less money have less choice and are

found near declining strips with fewer services, poorer quality housing and lower quality of life. The third problem Gwinnett County defined for itself. County officials have expressed a desire for defining "the epicenter of Gwinnett." Meanwhile, Gwinnett's cities create plans for "town centers" to create identity in cities that were historically rural railroad towns, which became bedroom suburbs for Atlanta, and have now evolved into places where residents want to belong to a town and not just subdivisions. These new "town centers" are an expression of a need for place in a placeless culture. This need is repeatedly answered blindly with the aesthetics of New Urbanism, but often without the framework, producing historic looking houses that will most likely be erased sometime in the future while replicating dendritic street patterns on unconnected parcels. I believe that there is no one "center" of Gwinnett, but a series of places defined by memory, design, events or rituals that take place there. I propose to improve the situation of these three problems with a design intervention that connects existing places to improve quality of life in Gwinnett County. This connective piece will serve as a social condenser in lieu of a center, provide links between polar populations, and reactivate declining strips while creating a sustainable infrastructural spine for future growth in the region.

HISTORICAL LAYERS OF LANDSCAPE AND THE NEXT LAYER

The history of Gwinnett County represents the evolution of most of the American landscape. By excavating the layers of physical landscapes, we reveal eras of American culture. Each era created infrastructure based on the values and priorities of its time. The Native Americans forged trails to meet the needs of hunting and trading. The white settlers created courthouse towns, militia districts and land lots in a time when organizing landscape and creating social law and order was priority, and agrarian life was tied to the land. The Railroad Era was about expansion, the bridging of boundaries, and the consolidation of production and consumption in towns. This era created cities, small railroad towns and miles of rail corridors across the county. Finally, the Highway Era transformed once agrarian landscapes, like Gwinnett, into a new landscape we call suburbia. This landscape is comprised of paved highways and roads in dendritic patterns, strip retail and office centers, and mass produced single family housing subdivisions. These represent a post World War II culture that primarily valued capitalism and standardization, which led to the abandonment of agrarian culture and a move to industrialization and urbanization. This led to the further subdivision of land with the use of new zoning tools to control land use. It is by recovering these layers of histories of place and juxtaposing them with one another that Gwinnett may find its identity and collective memory, and it is by acknowledging present cultures that it can define a new landscape.

Suburbs have never been about the cities that they surround, but about national policy; therefore, suburbs around the country are more similar to one another than they are to the cities they surround. To illustrate, Figure 2 shows how the growth rates of Gwinnett County more closely parallel those of the nation and the state than those of

Atlanta up until the 1950's when the automobile permitted more frequent travel between Gwinnett County and Atlanta.

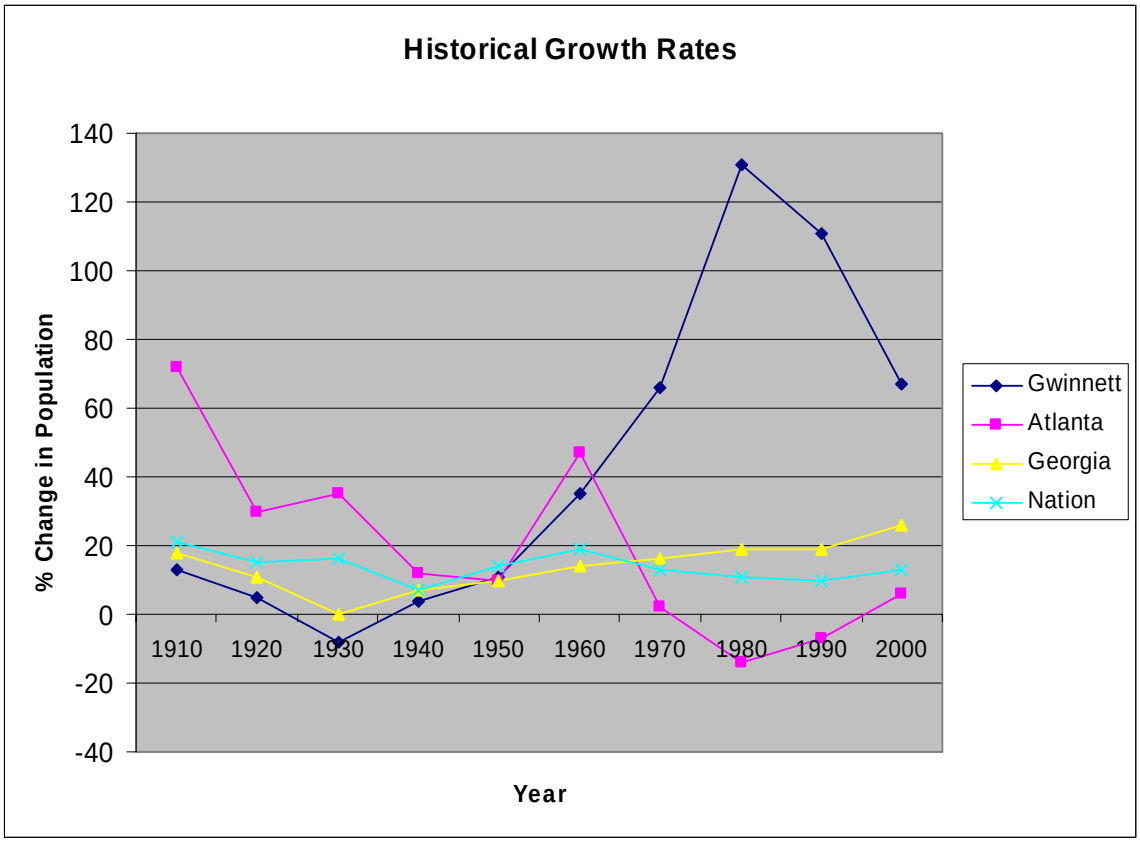

Figure 2 Comparison of Gwinnett County Growth to the Nation, the State and Atlanta (Data Source: U.S. 2000 Population Census; U.S. Census, Table 23, 1990 Population and Maximum Decennial Census Population of Urban Places Ever Among the 100 Largest Urban Places: 1790-1990; and U.S. Census, Population of Counties by Decennial Census: 1900-1990)

Suburbia has a negative connotation in modern architectural and planning discourse, mostly for not being urban. However, this is an unfair judgment. When we peel back the layers of the suburban landscape, we find that suburban American has worn many cultural landscapes throughout history, but the one thing it has never been is urban. To create a sense of place in suburbia by transposing the urban landscape of the 1920's, which New Urbanism theory proposes, is not returning to the past, but creating yet another new layer of landscape based on a new culture that values 1920's urban

neighborhoods and the lifestyle they represent. Whether or not this is appropriate is debatable, but what is important is that we acknowledge that the landscape we call suburbia is once again evolving and ready for a new layer that recognizes and represents the values and priorities of the new cultures that inhabit it.

The Era of the Natural Landscape

The first layer is the natural landscape composed of topography, rivers and streams. Gwinnett County is situated on a ridge between Atlanta and Athens. The ridge runs from the northeast to southwest of the county south of the Chattahoochee River.[3] This natural landscape feature played a crucial role in the development of the man-made landscape in every revision by every era. It served as a boundary between the original territories of the Creeks and the Cherokees as illustrated in Figure 3, it was the location of the first road, Peachtree Road, during white settlement as shown in Figure 4, and later became the location of a portion of the Southern Railroad during the railroad era.[4] Later during the Highway Era, Buford Highway adaptively reused portions of Peachtree Road and continued north parallel to the railroad. Another major natural feature that influenced the location of permanent infrastructure was a goldbelt that traversed the northeast corner of the county near Buford. The northern portion of the Southern Railway and later Buford Highway closely parallel this goldbelt.[5] As the remainder of this chapter will illustrate, the transportation infrastructure of Gwinnett County has always been influenced by the natural landscape and has always been about connecting multiple places, natural or man-made, to one another.

[3] Flanigan, Vol. I, p.19
[4] Worthy, p.1
[5] Flanigan, Vol. I, p.20

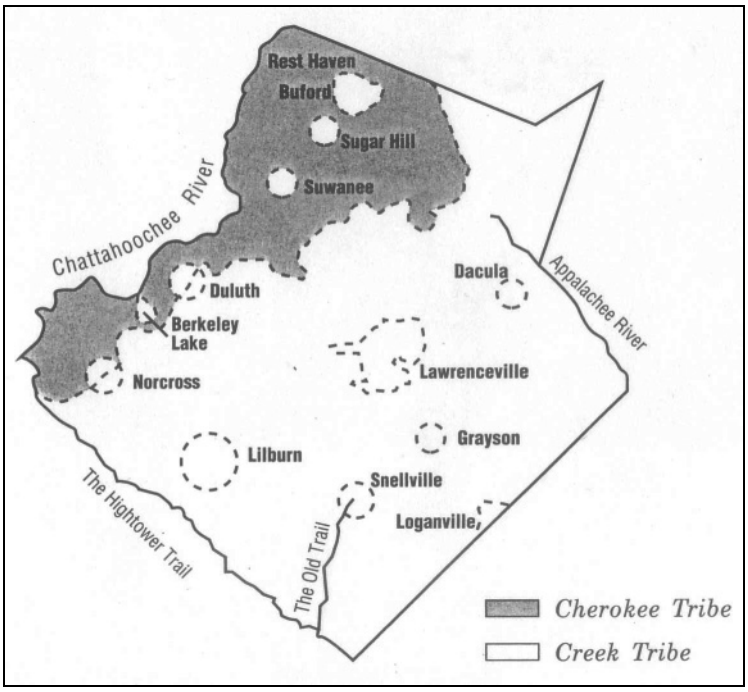

Figure 3 Map of Presettlement Gwinnett County showing Cherokee and Creek Territory Divided by the Natural Ridge Line
(Image Source: Flanigan, Vol. II, p.17)

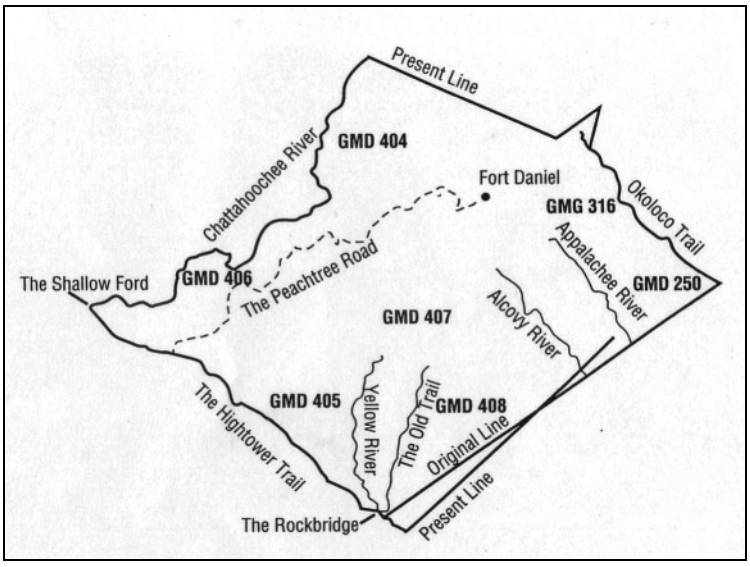

Figure 4 Map of Gwinnett County in 1812 showing Native American Trails, Rivers and the First Gwinnett County Road, Peachtree Road, Located along the Natural Ridge Line
(Image Source: Flanigan, Vol. III, p.20)

The recorded history of the land now described as Gwinnett County began when the land was taken from Native American tribes, however these tribes inhabited the land for hundreds of years before this history began. This unrecorded time is not insignificant. In fact, these tribes and their culture laid the first layer of man-made infrastructure upon the landscape in the form of trails. The trails were two to three feet wide. Suwanee Old Town was a documented Native American settlement of the Shawnee tribe that occupied the village among the Creeks on the Chattahoochee just above the mouth of Suwanee Creek. Trails in all directions led to this settlement.[6] In the era of the Native Americans, the trails served as both boundaries and common space. The Hightower trail was the first example of transportation infrastructure of many in the history of Gwinnett County that would serve as public space.

Although most evidence that Native Americans once inhabited Gwinnett County has been erased, much of the infrastructure, or trails, still exists today and influenced later development patterns of other cultures. One trail, which ran along the ridge line south of the Chattahoochee River, became Peachtree Road. Other trails were later used to describe boundaries between counties.[7] The most significant of these is the Hightower Trail, which was the original boundary between Creek and Cherokee territory and became the current boundary between Gwinnett County and DeKalb County. This trail was adaptively reused as a wagon road by the settlers, and a portion of it later became part of current U.S. Highway 78.[8] Much like the rivers, tributaries and streams that came before them or the arterials, connectors, and local streets that came after, these two trails had smaller foot paths leading to and from the major trails to multiple settlements.[9] In 1789, the Cherokee Indians ceded land to the United States including a portion of

[6] Flanigan, Vol. I, p.2-3
[7] Flanigan, Vol. I, p.3
[8] Worthy, p.150
[9] Flanigan, Vol. I, p.4

what is now Gwinnett County. In 1790, a treaty with the Creek Indians also ceded land, which later became part of Gwinnett. The remainder of what is now Gwinnett County was taken from both tribes by a third treaty in 1817. The boundaries of these land transfers were described by the natural elements of mountains and rivers.[10]

The natural landscape continued to determine the settlement and infrastructure of the first white settlers as well. The first major white settlement occurred at Hog Mountain, at the head of the Appalachee River. This was a place of trade among settlers as well as Native Americans. Since Hog Mountain was the most western point of white settlement during the War of 1812, it was selected as a location for a fort, known as Fort Daniel, which was built on the highest topographical point in the settlement.[11] Another fort was built in Native American territory on the banks of the Chattahoochee River, known as Standing Peachtree. Then the first road was built to connect the two forts, which were thirty miles apart. This road still exists as Peachtree Road. It served as a link between significant places, connecting Hog Mountain, a new place, to Suwanee, a former Native American village, following an existing Native American trail to where it intersected the natural ridge and then followed the ridge to connect to another old Native American settlement along the Chattahoochee River.[12]

The Era of the Courthouse Town

Between 1820 and 1870 was the Era of the Courthouse Town. After land was ceded by the Creeks and the Cherokees, Gwinnett County was created in 1818, and a new culture began a new layer of landscape. The priorities of this culture were the organization of territory and the establishment of social law and order; therefore, they elected county officials, levied taxes, established courts and selected jurors, organized

[10] Flanigan, Vol. I, p.1
[11] Flanigan, Vol. I, p.8
[12] Flanigan, Vol. I, p.15-16

militia, and subdivided all land into a grid of militia districts.[13] Each district was further divided into land lots.[14] Lots 10 and 100 of each district were reserved for schools.[15]

Once the land was surveyed and lots distributed by lottery, county officials selected the location of the county courthouse and "county town", which was to be "as near the center of the county as any other lot that was then for sale." A 250 acre lot was selected and purchased for the county town of Lawrenceville. Four streets were laid out forming the boundaries of the courthouse square. Then lots and streets were laid out on the land adjacent to the courthouse square. The lots surrounding the courthouse square were auctioned off, and the buyers built a variety of shops, offices, residential homes, and a boarding house on the lots without regulation of use.[16] With the exception of the courthouse, which was rebuilt after a fire in 1871 and still stands in the center of the courthouse square, the original buildings are gone, but the framework of streets and blocks of the courthouse square remains today. Figure 5 illustrates the framework of the courthouse town.

[13] Flanigan, Vol I, p.26
[14] Flanigan, Vol I, p.29
[15] Flanigan, Vol. I, p.50
[16] Flanigan, Vol. I, p.27

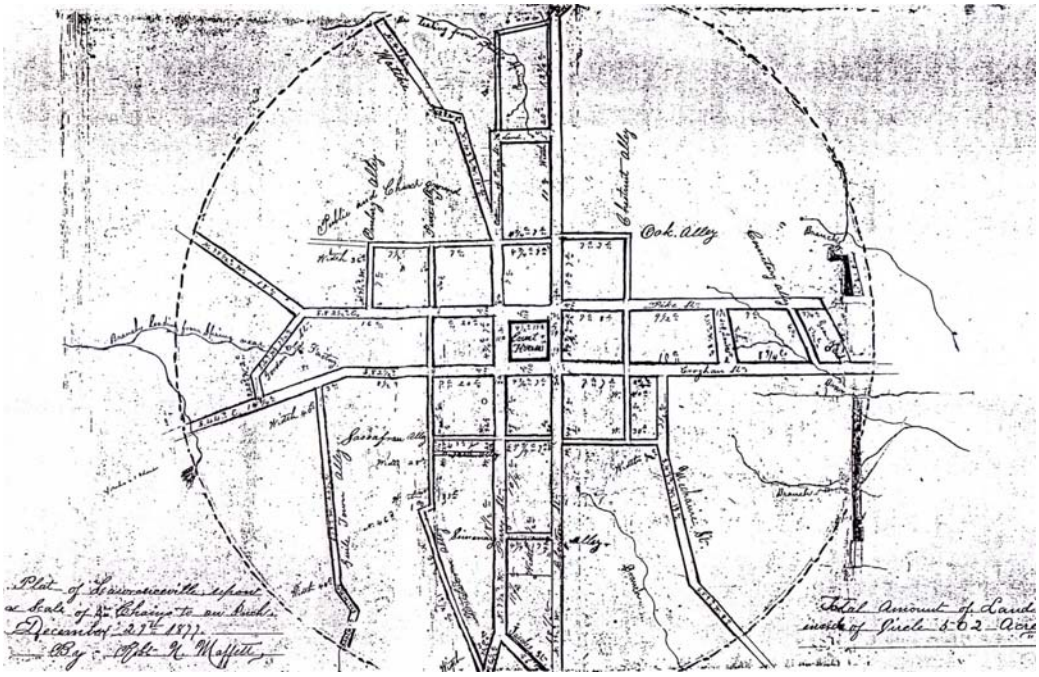

Figure 5 Map of Lawrenceville Courthouse Square in 1877
(Image courtesy of Gwinnett County Historical Society)

The second artifact of the Era of the Courthouse Town was a network of wagon roads illustrated in the map in Figure 6. Between 1821 and 1830, 31 dirt roads were built, 21 of which led to and from Lawrenceville. The manipulation of the natural landscape of thick forest to cut this network of roads to connect the county courthouse with other places of cultural importance illustrates the central role the courthouse town had in the lives of this settlement culture. These roads connected Lawrenceville to key farms, mills and other county courthouses and intersected existing roads, waterways and bridges. To construct these roads, they cleared a 20 foot wide path through the forest and created a 12 foot wide road free of tree stumps. All roads were measured from the courthouse and marked with signs.[17] These were the county's first design guidelines.

[17] Flanigan, Vol. I, p.72-80

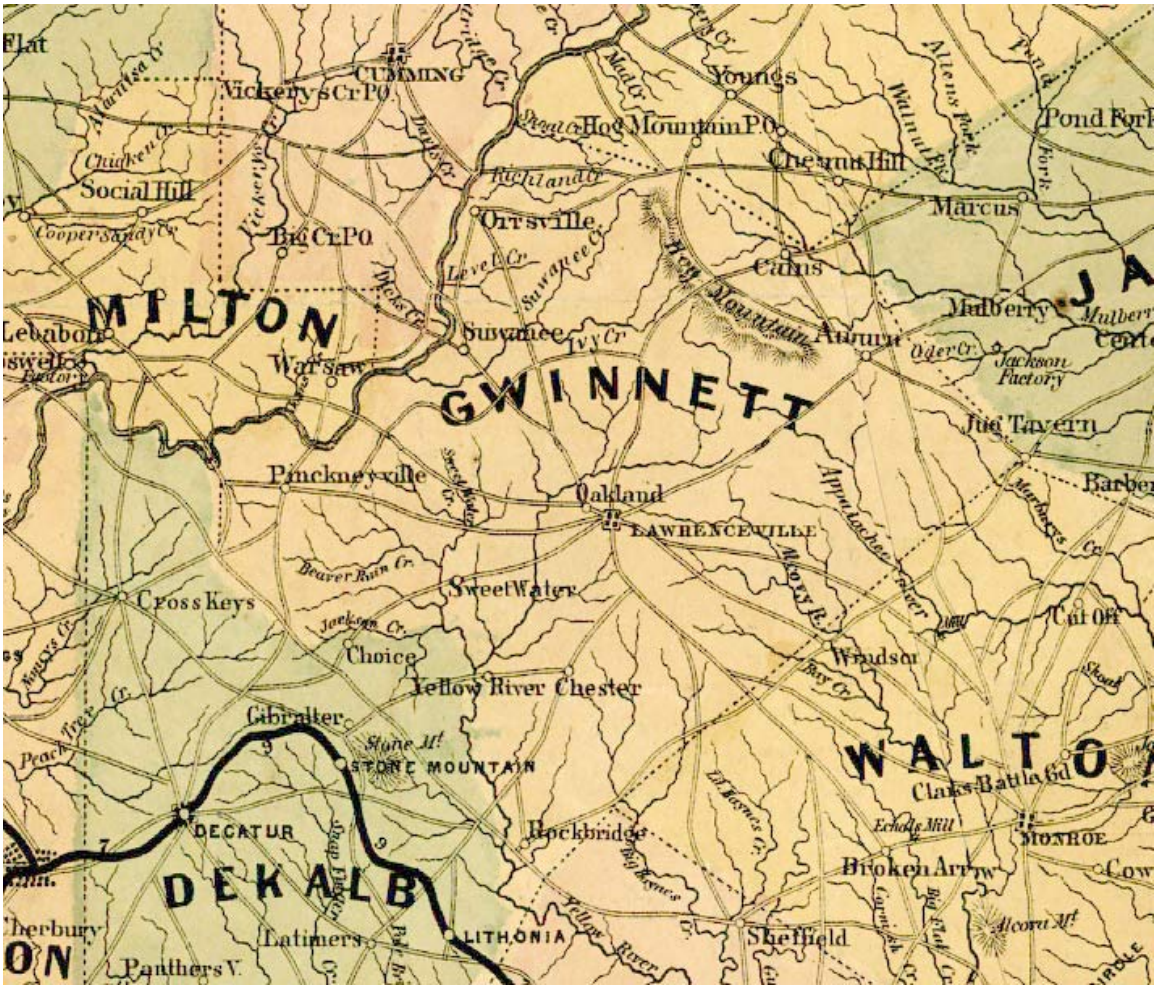

Figure 6 Gwinnett County 1864 – All wagon roads lead to the county courthouse. (Image Source: Carl Vinson Institute of Government, University of Georgia. Lloyd's Topographical Map of Georgia, 1864. Available online at http://www.cviog.uga.edu/Projects/gainfo/histcountymaps/gwinnetthistmaps.htm)

The first monument of collective memory of the settlement culture was also erected on the courthouse square in 1840, reinforcing its role as public space. The bodies of eight settlers who died fighting in the Creek Indian War were placed in a common grave in the corner of the courthouse square beneath a monument carved from Georgia marble.[18]

Most of the settlers' inherited landscape was unbroken forest. The objectives of the county were to "clear the land, erect homes, construct roads, build bridges, establish

[18] Flanigan, Vol. I, p.121-124

schools, organize churches, maintain law and order, and 'promote the general welfare' of the pioneer settlers."[19] In the first ten years of settlement the county grew 190%, adding 8,700 new people that came from other counties and states for fresh land.[20] They built an agrarian landscape of log cabins all over the county, which has since been erased.[21] However, the framework of the courthouse town, the monuments of the courthouse square, and the network of roads remain.

The Railroad Era

The Civil War brought an end to the prosperous plantation years in Gwinnett County. No battles occurred in the county, but when the war ended in 1864, farms and homes were stripped and looted. Without the institution of slavery, plantation farming ended, and small farms re-emerged as a last resort.[22] Likewise, the significance of the courthouse was replaced by the introduction of the railroad, the next layer of infrastructure upon the landscape. Although independent from one another, it is coincidentally symbolic that the original courthouse burned in 1871, the same year the first railroad was completed through the county. The courthouse was rebuilt, because it was a monument representing the original common foundation of the county, but the new culture of cotton farming and railroad towns eliminated its place as the center of Gwinnett County. The railroad itself was the new center around which life revolved.

For fifty years Lawrenceville was the only town in the county, but with the completion of the Southern Railroad along the western edge of the county in 1871 four new railroad towns: Norcross, Duluth, Suwanee and Buford, were founded along the line and became commercial centers. Between 1881 and 1898, three more railroad lines

[19] Flanigan, Vol. I, p.68
[20] Flanigan, Vol. I, p.97
[21] Flanigan, Vol. I, p.28
[22] Flanigan, Vol. I, p.228, 246

were built across the county, and like the Southern rail line, they also spawned new railroad towns including Carl, Auburn, Dacula, Gloster, Luxomni, Lilburn, Grayson, and Lawrenceville.[23] This accounts for all of the current cities of Gwinnett with the exception of Snellville, which was originally the site of a Native American burial ground that had trails leading to it from all directions, which most likely became roads at a later time. Figure 7 illustrates the network or railroads and railroad towns built across the county during this era.

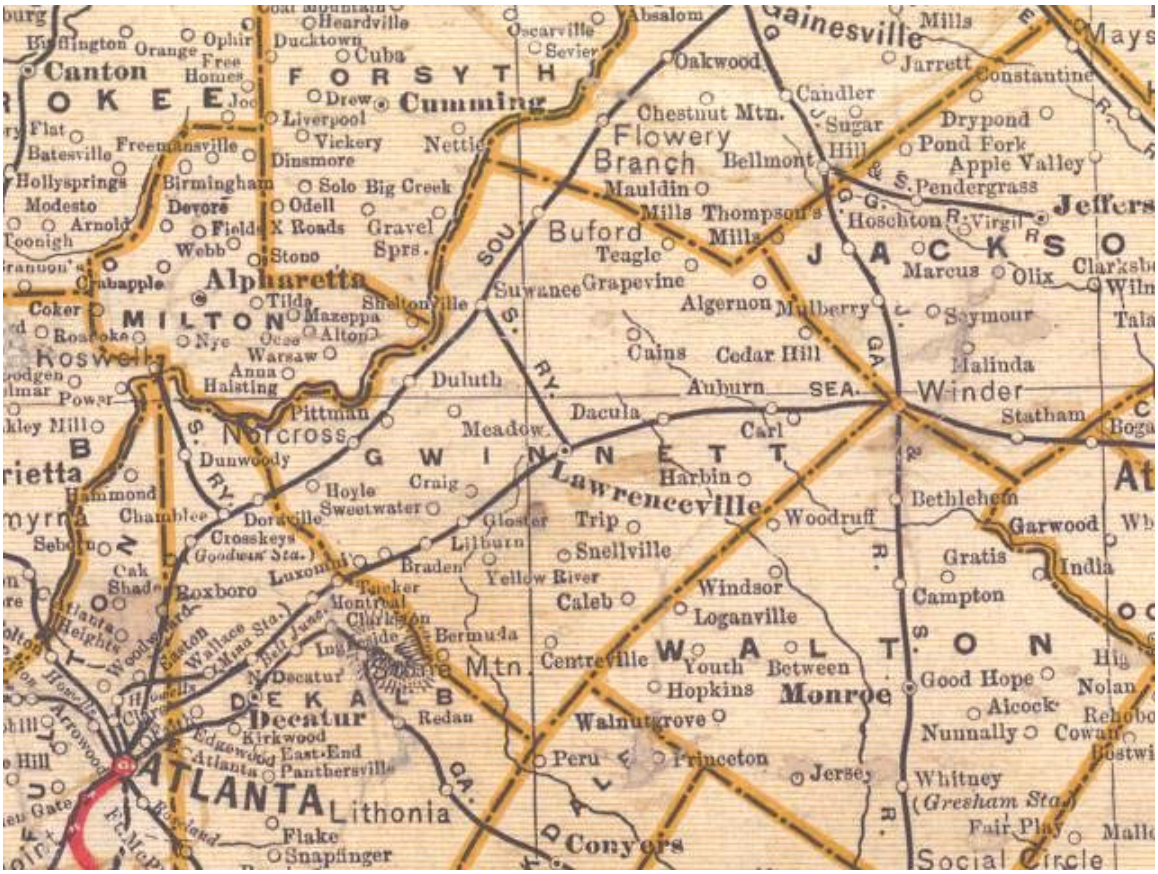

Figure 7 Gwinnett County 1899 – All railroads are completed. The Southern rail line follows Peachtree Road and the natural ridge from Norcross to Duluth.
(Image Source: Carl Vinson Institute of Government, University of Georgia. Central of Georgia Railway Map of Alabama and Georgia, 1899. Available online at http://www.cviog.uga.edu/Projects/gainfo/histcountymaps/gwinnetthistmaps.htm)

[23] Flanigan, Vol. I, p.248

Two of these railroad towns, Buford and Lawrenceville, later became employment hubs for manufacturing due to their existing infrastructure of a town and location along a railroad.[24] Most of these railroad towns share a similar form and generated similar typologies. This urban form, which is illustrated below in Figure 8, typically consists of two parallel roads, one on each side of the railroad tracks. One of these roads is lined with large farm houses, and the other is a one-sided Main Street, which faces the tracks and has a service alley behind. The alley serves as a buffer between the taller buildings on Main Street and the residential blocks behind it. While a few other roads run parallel to the tracks, most of the other streets are perpendicular to Main Street, many of which cross the tracks creating a small grid at the angle of the railroad tracks. These small, gridded street networks make these towns stand out today in a road map or aerial photo of suburban landscapes, because they are pockets of compact, connective networks in a sea of winding roads and larger land parcels. Single family houses and occasional churches line these roads, which all lead to Main Street and the railroad.

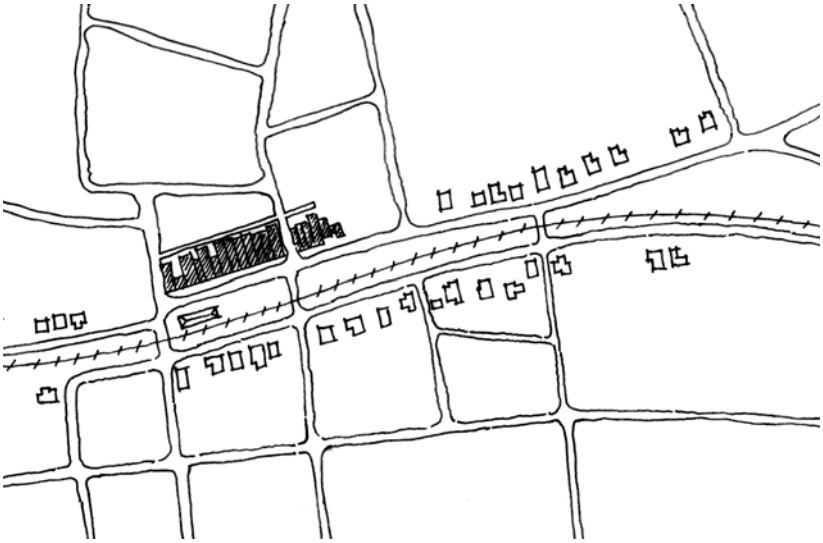

Figure 8 Norcross – A Typical Railroad Town

[24] Flanigan, Vol. I, p.248

The greatest number of lasting architectural typologies emerged during the Railroad Era. This is most likely because these buildings are crucial to providing definition to the framework of the railroad town much like the courthouse did for the courthouse square. Main Streets are defined by a collection of individual, multi-story buildings that sit adjacent to one another at a common setback, which creates a “street wall” opposite the railroad depot, and thus a sense of enclosure for Main Street. These buildings are storefront buildings that allow public access on the ground floor, reserving private residential, office or warehouse uses for the upper stories. The railroad depot served as a public building where commerce and public interaction took place. The collective relationship of these buildings to the street defines Main Street as a public space significant to public life, which is why this typology has lasted over time. Two other typologies still present in today’s landscape, the church and the cemetery, indicate a movement during the Railroad Era toward collective, place based town making and community building and away from independent agrarian life.

Cotton farms no longer border the tracks, and train cars no longer carry passengers, but the railroad and the framework of the railroad towns still exist as a layer of landscape today. The tannery and other booming businesses are long gone from cities like Buford, but the warehouse it once inhabited along Buford’s Main Street still stands and is home to new retail shops. Figures 9 illustrates this point comparing an illustration of historic Buford to a photograph of the existing urban form. Similarly, the depot in Norcross is now a restaurant. The Main Streets themselves have been paved and updated with sidewalks and parking meters, but many of the original storefront buildings still stand side by side, with a front row view of the railroad and a zero setback from the street and one another. The framework of Main Street together with the churches and cemeteries represent the collective memory of these individual towns and Gwinnett.

Figure 9 A mural of historic Buford compared to a photo of Buford today illustrates the enduring quality of the framework of this urban form due to the symbiotic relationship between the buildings and Main Street as a public space.

The Highway Era 1945-2000

In 1909, the introduction of the car led to county policy to pave the roads due to demand for better roads.[25] In the 1930's truck farming was introduced to Gwinnett County farmers, which allowed them to expand their markets to nearby towns and Atlanta.[26] Thus, the introduction of the automobile created the first dependence on Atlanta, and from this point on the evolution of the county would be influenced by both. Figure 10 illustrates highways built across the county over former wagon roads and railroad corridors connecting Gwinnett's railroad towns to Atlanta and other places.

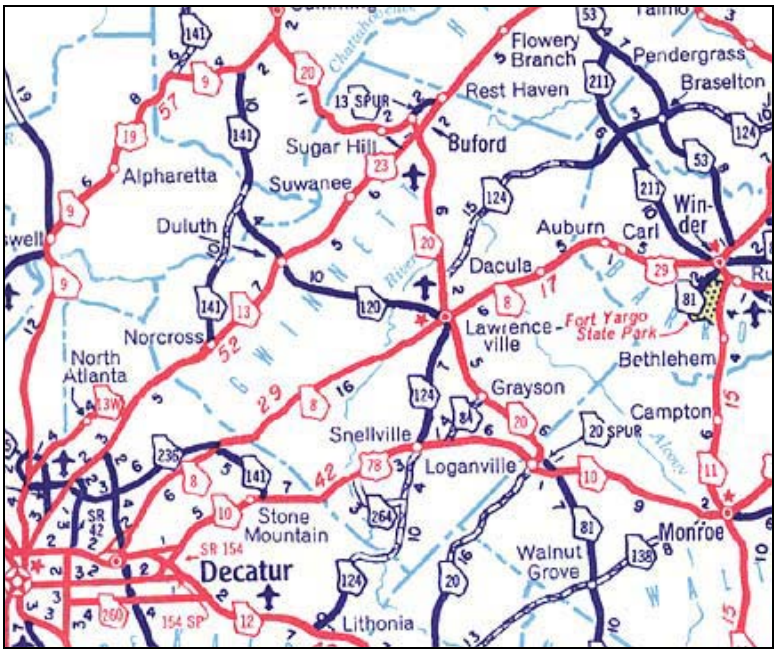

Figure 10 Gwinnett County 1952 - Network of highways prior to the construction of I-85. Buford Highway (Highway 13) follows route of Southern rail line.
(Image Source: Carl Vinson Institute of Government, University of Georgia. Official 1952 Georgia Highway Map, State Highway Department. Available online at http://www.cviog.uga.edu/Projects/gainfo/histcountymaps/gwinnetthistmaps.htm)

There were still 1200 miles of unpaved county roads in Gwinnett when the next revision of landscape occurred in 1959, a four-lane highway that covered half the county. This new layer had nothing to do with the layers that existed beneath it or with Gwinnett

[25] Flanigan, Vol. I, p.260
[26] Flanigan, Vol. I, p.275

County itself. The interstate was built to connect the larger places of Atlanta and Greenville, South Carolina.[27]

The building of such highways and the low density, auto-oriented development they enabled are a direct result of 3 federal policies that came out of a prosperous, post-war nation that was embracing standardization and mass production. After World War II, the Federal Housing Administration and Veterans Administration provided mortgages for new homes, which were directed at suburban, single family construction. This discouraged the renovation of existing housing stock, the construction of row houses, and the development of any mixed use buildings. Since financing was only for single family residential, no land was reserved for other uses, such as stores close to home. Second, the Zoning Enabling Act of 1923 reinforced this segregation of land uses by making it law, making it illegal to create mixed use or even mixed density neighborhoods with a variety of housing types. Finally, the Interstate Highway Program made automobile commuting affordable and convenient for the average citizen.[28] The standards for these new roads were also dictated by federal policy and the Cold War mentality that influenced it. The Civil Defense Committee of the American Association of State Highway Transportation Officials set street design criteria for the purpose of evacuation and cleanup in the event of a nuclear attack. As a result, decades of roads were constructed too wide.[29]

In Gwinnett County, a new layer of commercial places developed along I-85 and its supporting arterial strips, just as railroad towns developed along the railroad when it was built. However, the railroad transported people, so the scale of railroad towns was that of the pedestrian. A highway transports cars, thus the places along highways were scaled and accessible only for cars. Gwinnett Place Mall was developed along Pleasant

[27] Flanigan, Vol II, p.403
[28] Duany, p.7-10
[29] Duany, p.65

Hill Road just off I-85 in 1984 at the peak of Gwinnett's growth. This 1.4 million square foot mall was considered the "economic epicenter" of the county, and instigated a massive wave of growth to the north and east. [30] New highway strips were built off the interstate. This provided the infrastructure to open new land for development. Utilizing the new tool of zoning, parcels along these strips were zoned for single uses with large parking ratios creating a landscape that both required and accommodated the automobile to move from one place to another.

The form of the shopping mall illustrated in Figure 11 takes the concept of the ground floor, retail level of Main Street, encloses it in a building, and then surrounds it with automobile parking where there would otherwise have been residential. Since new housing was developed in isolation of other uses, the malls became places to go for public life and needs that were easily accessible due to a surplus supply of parking. These new interior Main Streets took on the activities of public life, such as holding concerts, visiting Santa, and interacting with others in the social activity of shopping, despite their private nature.

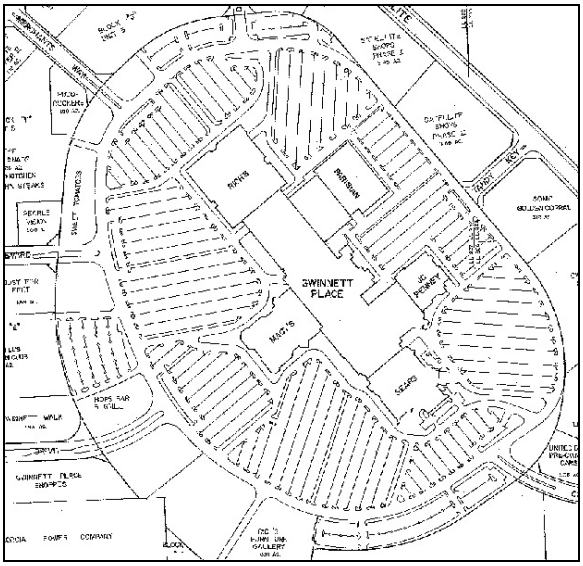

Figure 11 Gwinnett Place Mall – A Typical Shopping Mall

[30] Commercial Properties

The shopping mall is dependent on the mobility of the shopper by automobile; therefore, it is also vulnerable to competition from new shopping malls, which a consumer can access just as easily. Consequently, new shopping malls and the auto-oriented, single use growth that came with them were developed further north along I-85 creating leap-frog development. In 1999 the 1.7 million square foot Mall of Georgia was developed on 96 acres along I-85 at the juncture of Highway 20.[31] In 2001, yet another 1.2 million square foot mall, Discover Mills, was developed at I-85 and Highway 120.[32] In addition to shopping malls, Gwinnett's I-85 corridor became a hotbed for office parks and industrial development in the late 1970's to early 1980's, which created regional employment centers and further spawned residential subdivision development.[33]

Each new mall and corresponding strip highway sparked new residential and office development in its vicinity. The resulting physical evidence of this era includes single use, single family housing subdivisions, shopping malls and strip centers, office parks, civic institutions including town halls, churches and schools, and miles of highways and roads. Each component is separated from the others. As a result, suburban residents spend an unprecedented amount of time moving from one place to another.[34] The interstates, strip highways, and network of roads and utilities laid out in the Highway Era are permanent and will forever be present in future landscapes, however it is unlikely that much of the architecture will be around 100 years from now. This is because the buildings are temporary objects in the landscape, much like the log cabins of the settlers, which have nothing to do with the framework or the definition of public space. Figure 12 illustrates Gwinnett's current series of "strips" and shopping

[31] Commercial Properties
[32] Gwinnett Magazine Online
[33] Commercial Properties
[34] Duany, p.5-7

malls superimposed upon the existing landscape of railroad towns and paved wagon roads.

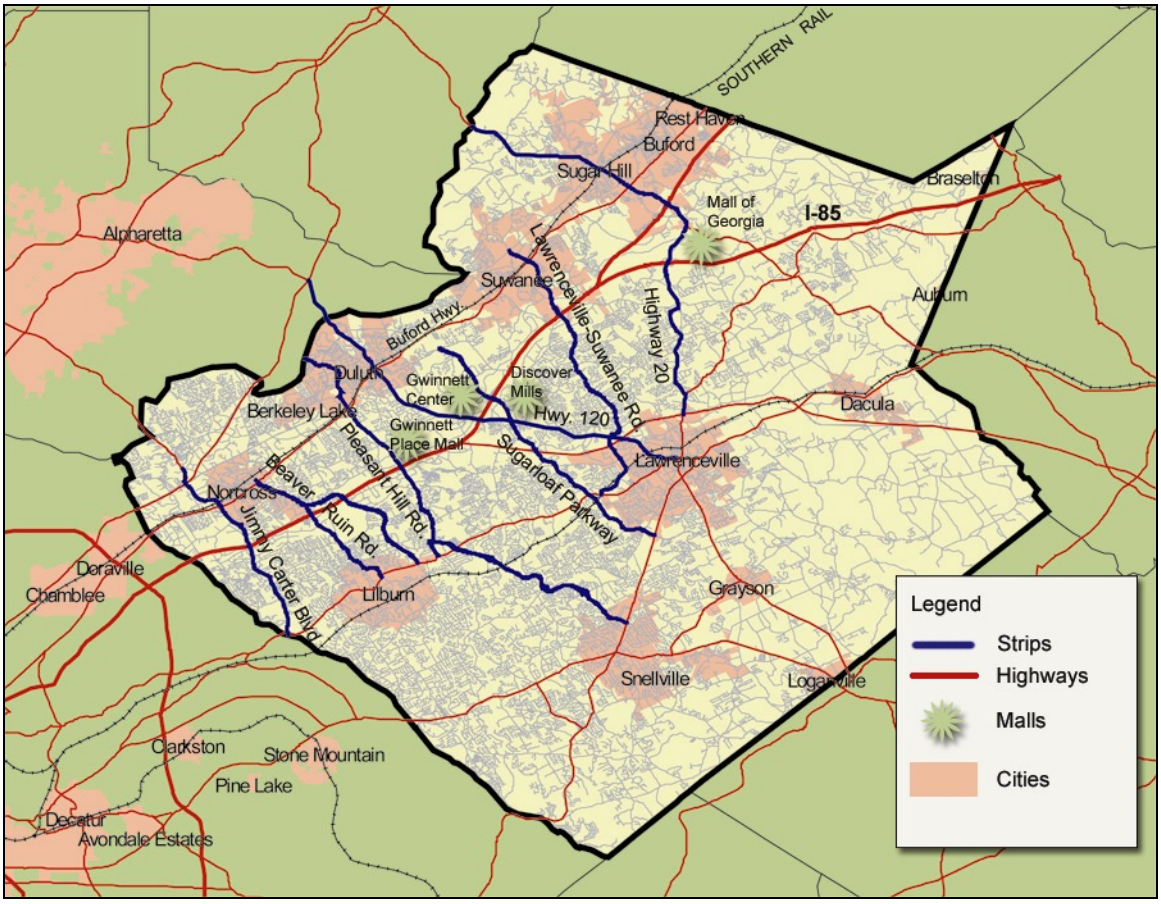

Figure 12 Map of Gwinnett County's Current "Strips" and "Places"

The Era of Multiple Centers

The next layer is the era of multiple centers. Robert Fishman views the current suburban situation as the diffusion of "urban economic and social functions throughout vast regions" afforded by revolutions in transportation and communication technology. However, he predicts that this century will see a change in direction of this dispersion momentum and a return towards concentration. Fishman wrote, "Momentum today moves toward diffusion and sprawl, just as momentum in 1900 moved toward overcrowding. Then, as now, however, other forces are at work beneath the surface." He believes that we are moving to the "re-urbanization of great regions with distinct edges and vital centers." Fishman claims that it is vital to economic survival of regions that they re-urbanize in this way to compete in the new global economy, in which Fishman forecasts "the key players will not be nations but competing regions."[35] He warns that the regions that will survive in this new world will be "those that offer their citizens a range of choices and opportunities, like active central cities, coherent suburbs and small towns, and easy access to open space." Fishman claims that there is "a new appreciation of compact communities with lively streets, diverse neighbors, a range of destinations within walking distance, and good mass transit." He suggests that the solution to designing for this new polycentric future is "by using history as a vital resource to reweave the urban fabric." He cites examples of such reweaving as replacing modernist developments with traditional streets and pedestrian scale buildings, using 19th century tactics of integrating rail transit with coherent communities as Peter Calthorpe is doing, and creating walkable neighborhoods with public space and mixed uses and classes in cities and new development at the region's edge as Andres Duany and Elizabeth Plater-Zyberk are doing.[36]

[35] Fishman, p.35
[36] Fishman, p.36

What Fishman is describing is an urban design theory commonly known as New Urbanism. This theory has had a strong impact on public policy as smart growth for better air quality has become a political issue that has guided this new layer of multiple centers across the landscape. In 1999 the Clinton-Gore Administration created a program to coordinate policies and activities to improve the quality of life of American communities. The intent of the program was "to help communities to revitalize American cities, towns, and older suburbs, encourage new investments, bring historic neighborhoods back to life, develop alternative transportation methods, increase regional cooperation, protect the environment, create parks, preserve open spaces, and foster smarter growth."[37] Locally, the Atlanta Regional Commission made policy in the Regional Transportation Plan in 1999, which initiated the Livable Centers Initiative (LCI) program to provide funding from federal transportation funds for studies and implementation of transportation projects located in activity and town centers. The purpose of the program is to encourage increased residential development, mixed-uses and connectivity in these centers.[38] Essentially, the LCI program is the government adoption of New Urbanism theory, which brought this alternative urban design theory into the mainstream. In fact, the following list includes several of the goals of the LCI program that directly emulate principles of the Congress for New Urbanism.

1. Encourage a diversity of medium to high-density, mixed income neighborhoods, employment, shopping and recreation choices at the activity and town center level.
2. Provide access to a range of travel modes including transit, roadways, walking and biking to enable access to all uses within the study area.

[37] White House Task Force on Livable Centers
[38] Atlanta Regional Commission. *FY 2003 Livable Centers Initiative*

3. Encourage integration of uses and land use policy/regulation with transportation investments to maximize the use of alternate modes.
4. Preserve the historical characteristics of activity and town centers and create a community identity.
5. Develop a local planning outreach process that promotes the involvement of all stakeholders.[39]

Several cities within Gwinnett County have gone through the LCI process and created their own "centers." These cities include Duluth, Suwanee, Sugar Hill and Snellville, which now all have their own amphitheater, park and town greens. Norcross has also been through the process, and the result is a relatively connected network of sidewalks and other pedestrian amenities and improvements.

Fishman characterizes this new era as the revitalization of dominant central cities made stronger by "a network of smaller centers linked to the core by revived regional rail systems." He labels this new era as "regional pluralism."[40] This is the current era that Gwinnett County faces and raises the question of what form this next layer of landscape should take. Who will be responsible for implementing regional rail is still a political question, however what is important is the framework and legacy of streets, blocks, public spaces and buildings that Gwinnett builds along regional rail. For like the wagons and passenger rail cars that once served as primary transportation before, transportation technology is likely to change, but the framework of the development around that form of transportation will likely remain and be adaptively reused over time.

[39] Atlanta Regional Commission. *FY Livable Centers Initiative*
[40] Fishman, p. 35

The Question of the Next Layer

This brings us to the question of the next layer. Gwinnett County is currently in yet another moment of change. While Gwinnett continues to grow, the growth rate is declining for the first time. The county finds itself between two forces of change, which provides an opportunity and need for Gwinnett to reinvent itself. Growth is beginning to bypass Gwinnett to more rural counties beyond its boundaries as well as revitalized neighborhoods within the City of Atlanta that offer a sense of place. Figure 13 illustrates this divergence of growth patterns between Gwinnett and its competition.

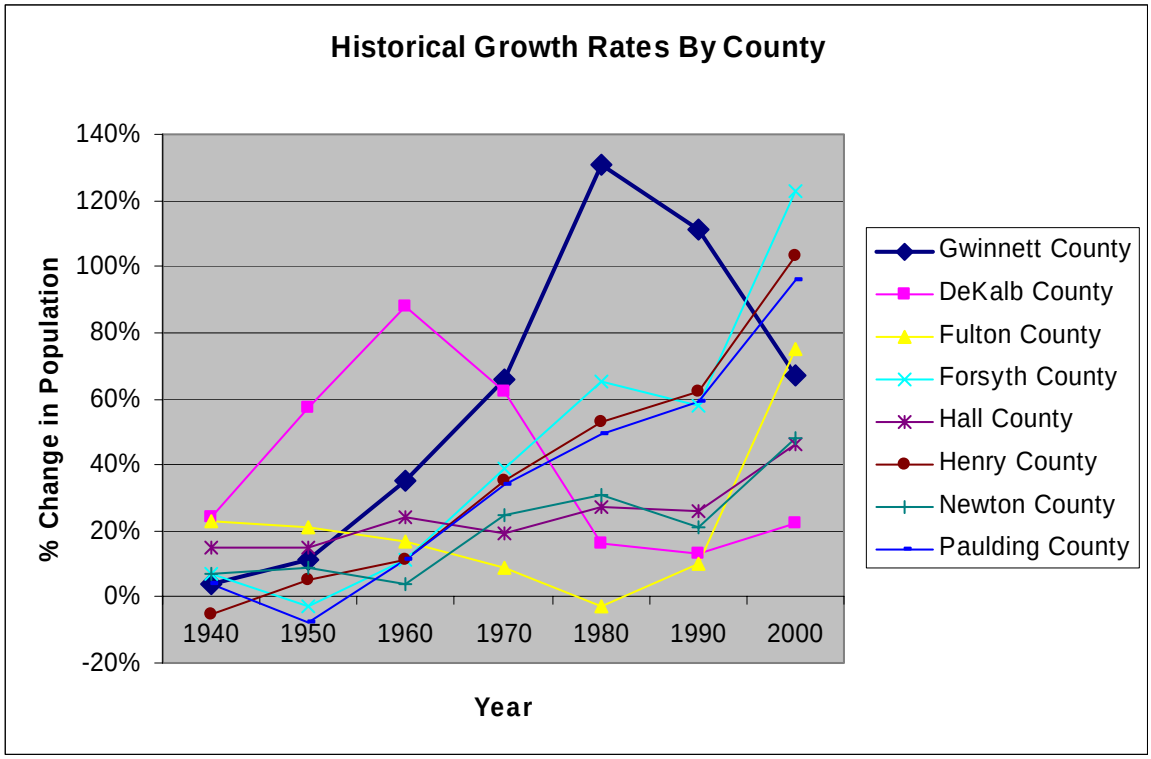

Figure 13 Gwinnett County Growth Rates Compared to Counties Beyond Its Boundaries and More Urban Counties Experiencing Resurgence
(Data Source: U.S. 2000 Population Census, and U.S. Census, Population of Counties by Decennial Census: 1900-1990)

"When offered true community, buyers require no other amenity, not even location."[41] It is this principle that suggests a huge potential for the continuation of Gwinnett's economic success. If Gwinnett could provide a true sense of community within its neighborhoods equal to those found within the City of Atlanta, but at a lower price due to the competitive advantage of lower land costs, then it could compete. Gwinnett is no longer a rural suburb, but it is also not urban, so it is caught somewhere in the middle, struggling with urban problems like congestion and crime with a landscape built for suburban lifestyles. The following chapters attempt to define these problems of liminality and propose the next layer of landscape as a solution.

[41] Duany, p.107

Strip Development Patterns

The first problem identified in the current suburban situation is that of the suburban strip. Strip development generates unsustainable, leapfrog development patterns leading to dead malls on declining strips, the segregation of housing by income, and the segregation of retail by age.

In typical strip development, all land along arterials is zoned for commercial use; therefore, instead of focusing growth in a particular area, most development happens incrementally along miles of strip on independent, unconnected parcels. The Urban Land Institute (ULI) warns that "current patterns of growth and development along America's suburban commercial strips are unsustainable."[42] ULI cites the following problems with this development strategy.

> "New development sprawls outward even as sites closer to the city remain vacant and older retail centers deteriorate. Retail overzoning thus has had the effect of extending strips prematurely in discontinuous and inefficient ways as developers leapfrog over one another…Some strips, or parts of strips are left to deteriorate even before they have been fully developed. This leaves them unfinished indefinitely, at risk to competition from newer and more enticing shopping environments, and difficult to revitalize because of their characteristic sprawl and lack of focus."[43]

[42] Beyard, p.iv
[43] Beyard, p.8

Another characteristic of strip development patterns is that housing is disposable. Table 1 indicates that homeownership in Gwinnett is generally more temporary than the Atlanta region as a whole. In fact, 53% of owner occupied households lived in their home for 5 years or less, and 73% for 10 years or less.[44]

Table 1
Gwinnett County Homeownership and Rental Tenure Compared to the Region

	Gwinnett	Atlanta MSA
Average Home Ownership Tenure	8 years	10 years
Average Rental Tenure	3 years	4 years

Data Source: U.S. Census 2000, SF3, Table H038

One reason for this is that when a new strip is constructed, another strip dies. This can be illustrated by looking at home values. The current median home value of a new home, mostly built along newer strips, is $272,900, but the medium resale home price is $200,000.[45] This is due in part to the poor quality of construction and short shelf life of new suburban houses, but it also proves that houses do not appreciate well in the strip system. It is noteworthy that there is a correlation between the age of housing structures, the value of those homes, the low-income of those that live in those homes, and an above average tenure of stay in these communities. Figures 14-17 illustrate this correlation. It is a picture of lack of choice caused by lack of new affordable housing and lack of non-automobile dependent environments in newer development. Whether this is an intentional exclusion of the poor by developers and municipalities wanting only to draw the middle and upper class, or whether it is a side effect of single use zoning is debatable, but what is clear is that the result is segregation and a continual cycle of

[44] U.S. Census 2000, SF3, Table H038
[45] Gwinnett County Chamber of Commerce

decline, with poor residents living in environments designed for the middle class for much longer after the original middle class flocks to new communities.

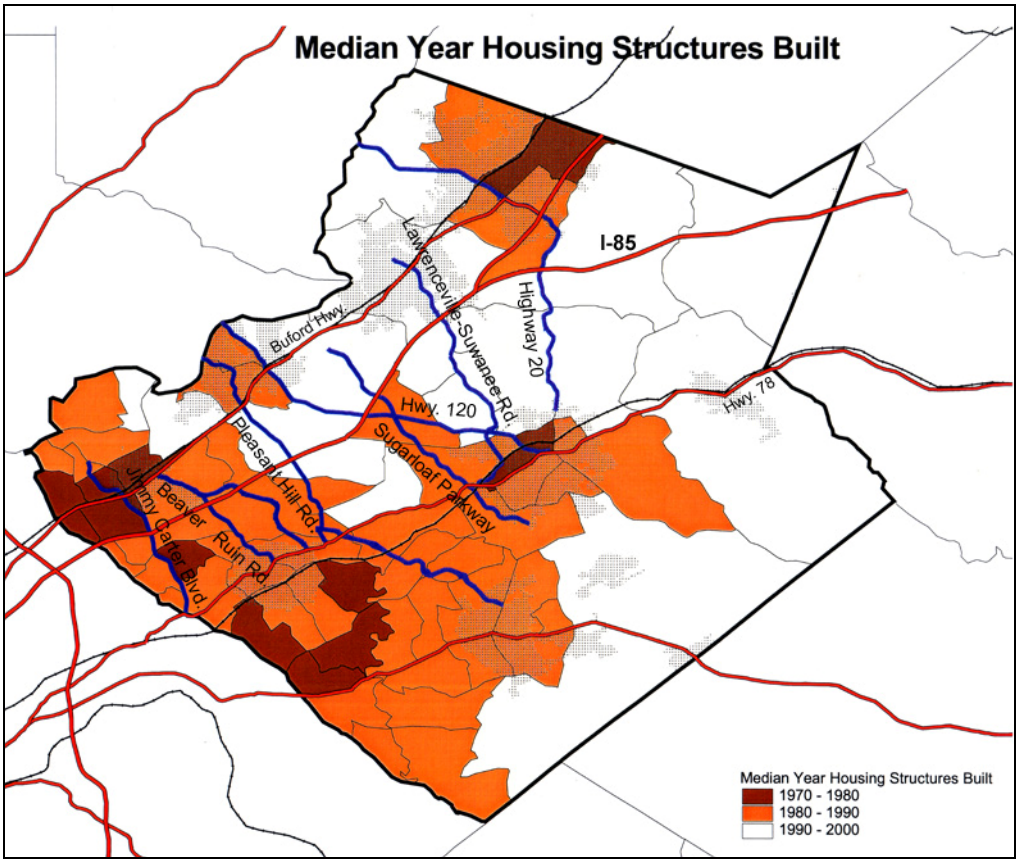

Figure 14 Age of Housing Structures
(Data Source: U.S. Census 2000, SF3, Table H035)

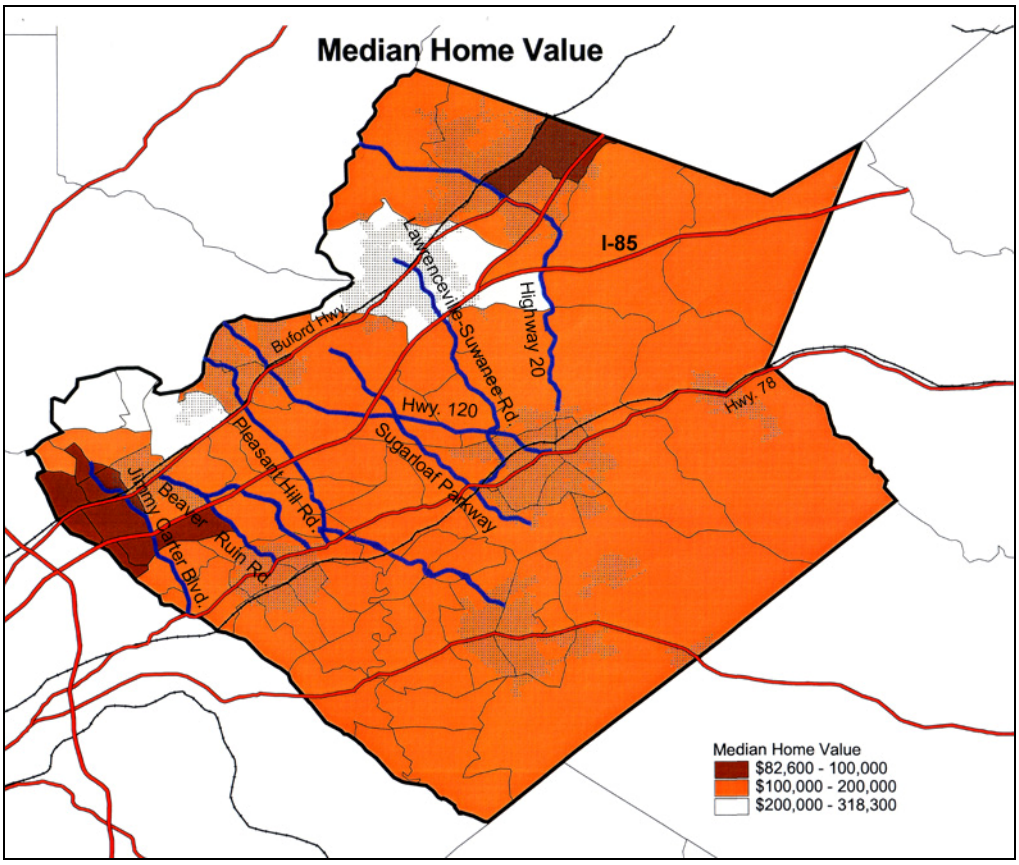

Figure 15 Median Home Values
(Data Source: U.S. Census 2000, SF3, Table H085)

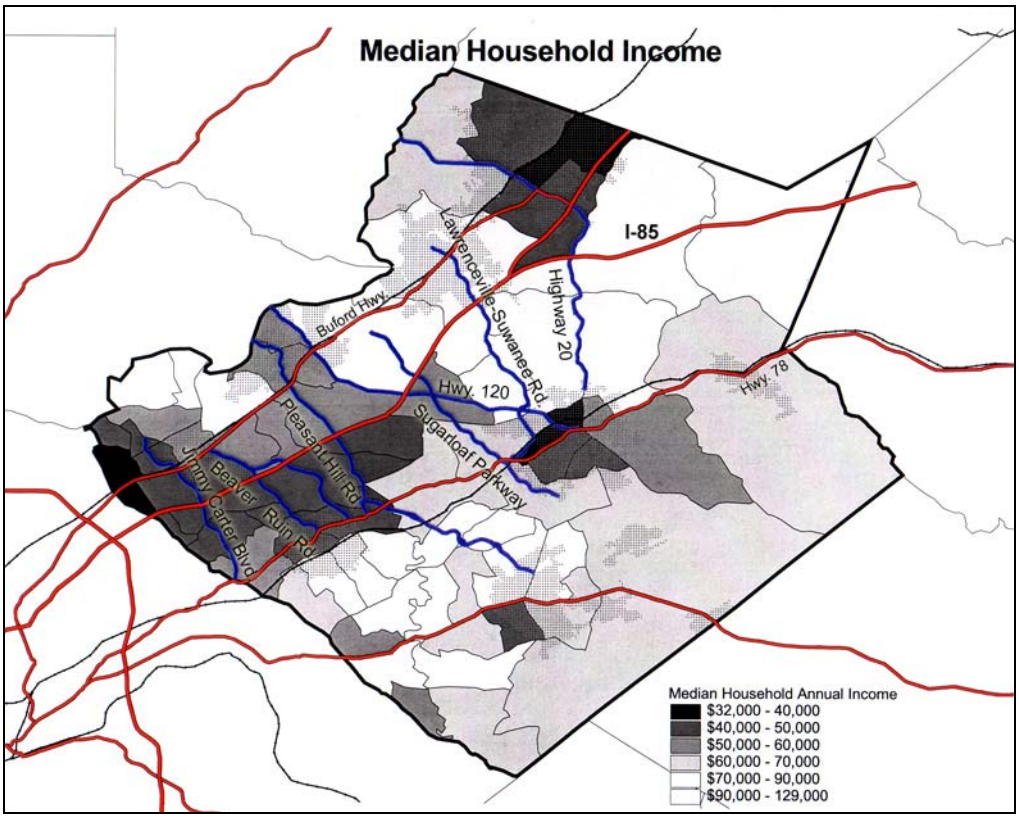

Figure 16 Median Household Income
(Data Source: U.S. Census 2000, SF3, Table H053)

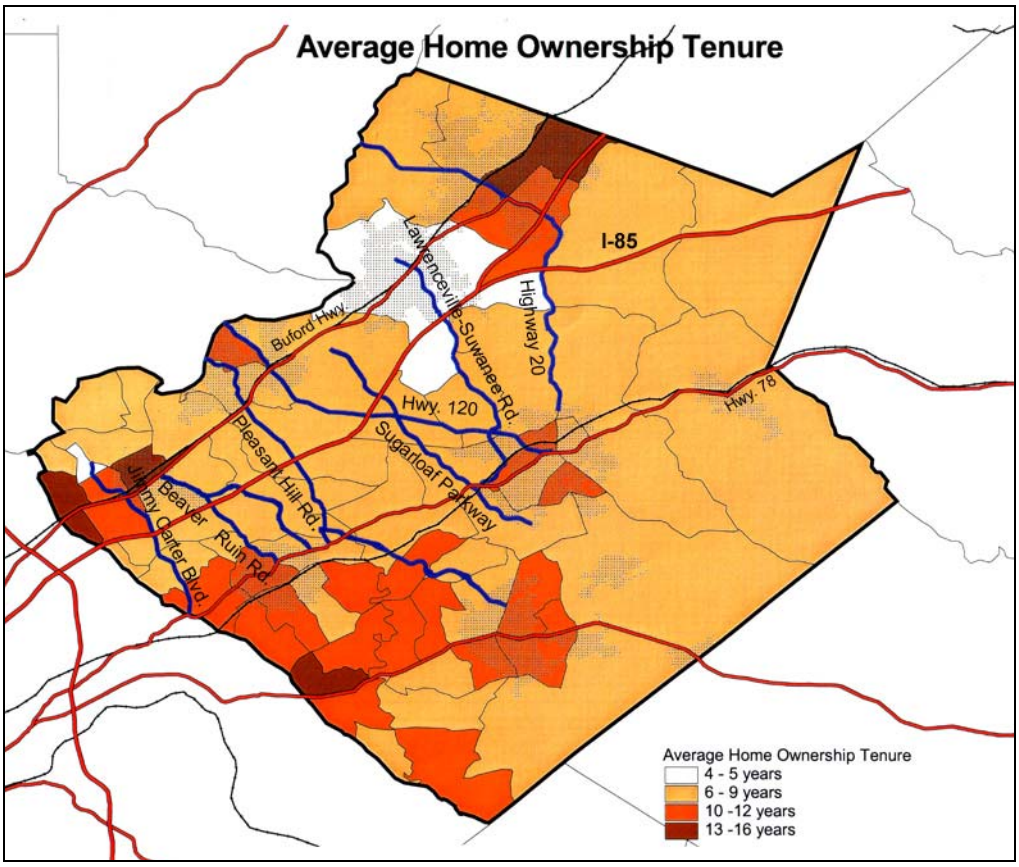

Figure 17 Average Home Ownership Tenure
(Data Source: U.S. Census 2000, SF3, Table H038)

In an analysis of where residents lived in 1995 compared to 2000, the results were as expected. Only 42% lived in the same residence as they did 5 years before. Generally, Highway 20 and Sugar Loaf Parkway, the most northern strip and the newest strip, are attracting residents from the southern strips, and the other strips are attracting newcomers to Georgia,[46] most likely immigrants along Jimmy Carter, Beaver Ruin and Pleasant Hill and middle class transfers along Lawrenceville-Suwanee, the current thriving strip.

[46] U.S. Census 2000 SF3, Table P024, note those assumed to be relocating from other Gwinnett County strips reported moving "from another residence in Gwinnett" and other new residents along the other strips reported moving "from elsewhere in U.S." or "from a foreign country"

If this pattern of development continues, this cycle of decline will also continue. People moving from older places to new places is nothing new. One of Atlanta's neighborhoods built in 1890, Grant Park, is currently experiencing resurgence, but it also lost residents when new suburbs were built further out in Morningside and Druid Hills, which are now considered intown neighborhoods.[47] The point is that the solution is not to stop mobility, which may be impossible due to human nature, but to build frameworks that can better adapt to new populations, perhaps a poorer one and later a new wave of middle or upper class, such as the cycle Grant Park has gone through. It is because of the mix of uses, walkability, and mix of building types that this cycle has successfully occurred. In order to stop this cycle of strip development and revitalize older strips, both new and old development need to become more sustainable.

[47] Bo Bridgeport Brokers

A Changing Demographic

The second problem is a demographic one. The current challenge is the pluralism of culture. For the first time in history since early white settlers extinguished the competing Native American culture in the early 1800's, the landscape we call suburbia is not guided by one culture. Multiple cultures exist based on race, income and motivation for being there. In 1941, Gwinnett County had a population of 30,000, 90% of whom were Anglo-Saxons.[48] Today, Gwinnett has a population of over 600,000 and only 67% are White.[49] This shift in demographics goes far beyond race. The evidence of new suburban cultures also exists in new types of family structures and travel patterns.

Travel Patterns

Of Gwinnett County residents that reported "living in a place" in the 2000 census, only 16% worked in the same place. However, Gwinnett County is no longer a bedroom suburb of Atlanta, in which everyone lives in Gwinnett and works in downtown Atlanta. The Atlanta Metropolitan Region has evolved into a polycentric model, which is made up of multiple centers. As a result, there are jobs throughout the region including Gwinnett County. In fact, 55% of workers that live in Gwinnett County also work in Gwinnett County.[50] So why don't these people live in the same place as their job? One explanation is that decades of single use zoning have separated work places from residential places, so there are few places where one can both live and work in the same place in the suburbs. It is this 55% that I am most concerned with. If one is willing to live reasonably close to where they work and choose to reduce their contribution to the region's problems of congestion and air pollution, they should be rewarded and encouraged to do so with a satisfactory quality of life. However, the quality of life in

[48] Flanigan, Vol. I, p.276-277.
[49] U.S. Census 2000, SF1, Table P008 and Table P001
[50] U.S. Census 2000, SF3, Table P026

Gwinnett County is relatively low according to the following indicators: travel times and walkability. Less than 1% of Gwinnett County workers currently walk to work and even less ride bikes.[51] As Figure 18 illustrates, 54% travel a half hour or more to work and 13% travel over an hour.[52] 83% of Gwinnett workers drive to and from work everyday in a single-occupancy vehicle, putting nearly 248,000 cars on congested highways.[53] In the next 20 years it is estimated that Gwinnett's population will increase by 62% and employment will increase by 89%, which could create nearly 2.5 million extra vehicle trips per day.[54] If this forecast is allowed to come true, quality of life will decline even further.

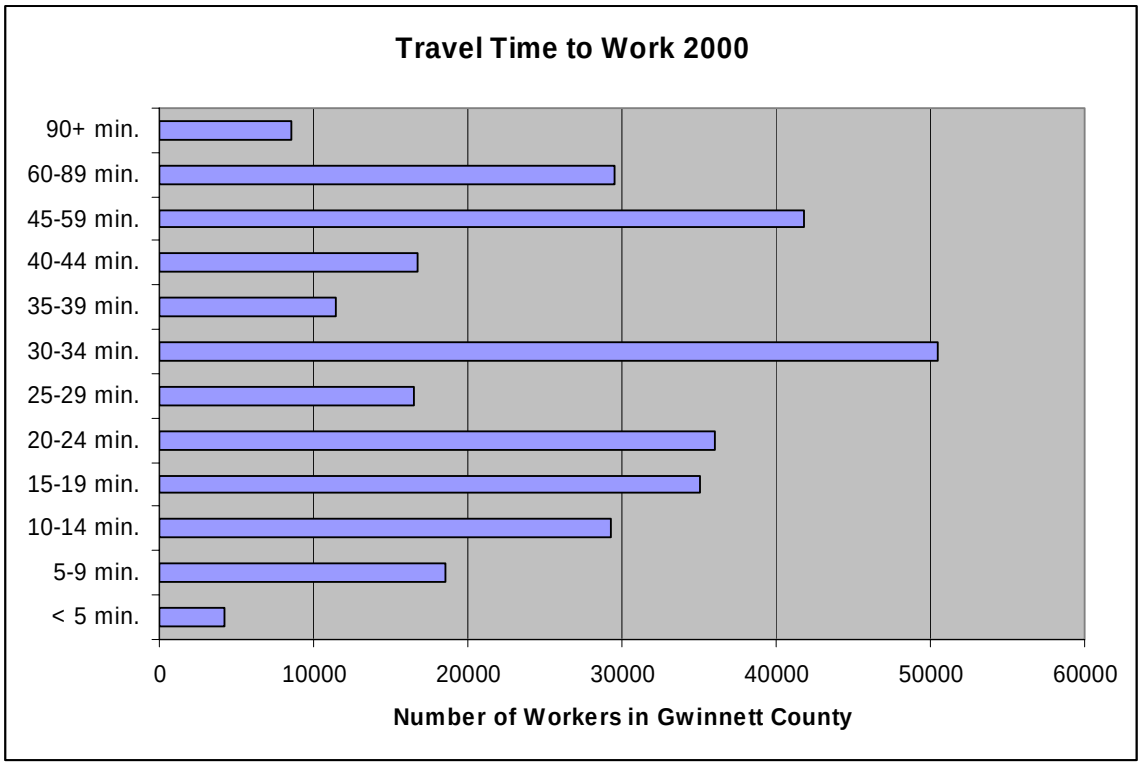

Figure 18 Gwinnett County Workers' Travel Time to Work
(Data Source: U.S. Census 2000, SF3, Table P031)

[51] U.S. Census 2000, SF3, Table P030
[52] U.S. Census 2000, SF3, Table P031
[53] U.S. Census 2000, SF3, Table P030.
[54] Gwinnett County Department of Transportation

Family Structure

Figure 19 gives a realistic picture of Gwinnett's changing household structures. Today, only 75% of Gwinnett County households are considered families. Of these families, only 55% have children in the household. In fact, 36% of all households are married couples without children living in the home, 18% of all households are single person households, and 7% of all households are two or more unrelated persons.[55] The average household size is 2.88, which is not much higher than that of the Atlanta MSA.[56] So why were 78% of the housing units built in Gwinnett County in 2002 single family structures[57] despite the fact that over 50% of all households need only one bedroom? The answer is zoning and history. The majority of land in Gwinnett County is limited to 1-2 dwelling units per acre, and historically, this has served Gwinnett's formerly rural population, and more recent population of families with children. However, Gwinnett must change density policy to accommodate the new population affordably as well as create infrastructure for future populations.

[55] U.S. Census 2000, Table P018 and P026
[56] U.S. Census 2000, Table P017
[57] Gwinnett County Department of Planning & Development Planning Division, p.25

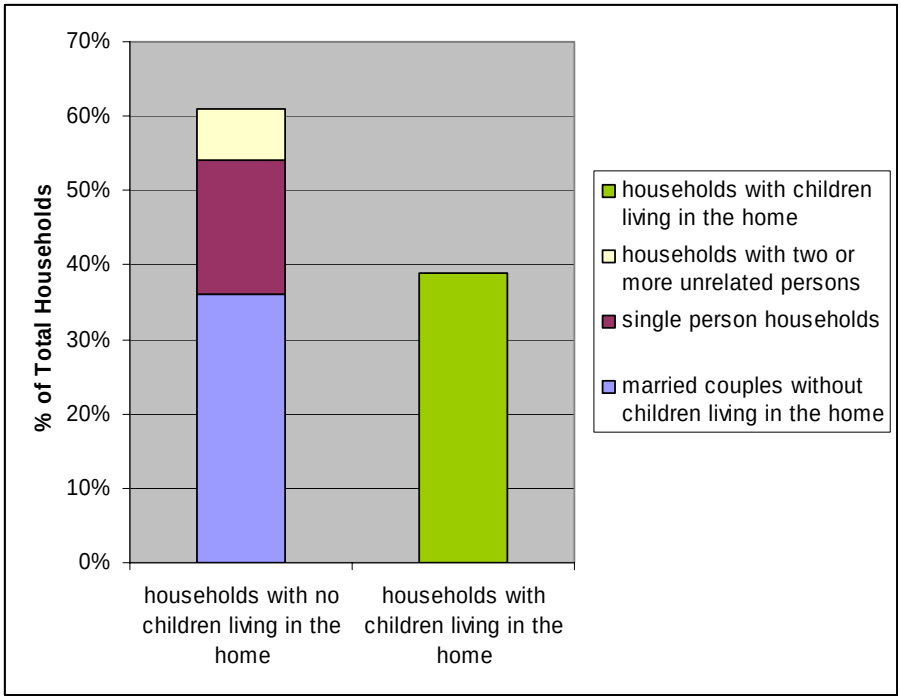

Figure 19 Gwinnett County Household Types
(Data Source: U.S. Census 2000, Table P018 and P026)

Race and Ethnicity

Another demographic issue is that of a growing immigrant population. It appears that the problem of immigration and the problem of abandoned strips fed one another. As a strip began to decline with the generation of a new strip, the middle class migrated with the development, leaving less desirable, no longer new, auto-oriented, suburban subdivisions for those with less money and choice. This surplus of devalued housing led to a mass immigration of Hispanic immigrants to the areas with declining services, housing conditions, tax bases and schools. Likewise, the new immigrant population caused first generation inhabitants of these subdivisions to flee further north in search of freedom of social competition. The situation is not unlike the “white flight” that occurred in urban cities across America in the 1960’s. As neighborhoods and schools became racially integrated, middle and upper class whites fled in droves to the suburbs to escape difference and the fear of social competition. As a result, inner cities faced the financial

burden of supporting services for the city's poor with a downward spiraling tax base, which they are just now beginning to recover from. Ironically, Gwinnett County is now facing the same problems of the original "white flight," which created and supported its rapid growth over the past forty years.

Statistics indicate that Gwinnett is becoming more racially diverse. Between 1990 and 2000 Gwinnett County's Hispanic population increased 657%, the Asian population increased 317%, and the Black population increased 327%, while the White population increased only 25%. These numbers seem distorted relative to the actual per cent of the total population that these minorities make up, 33%. Whites still make up 67% of the population, however the dramatic increases indicate a significant shift in demographic trends. Whites only increased by 25% despite the fact that more whites moved into the county between 1990 and 2000 than any other race, because there were so many Whites already there. Minorities, on the other hand, increased dramatically due to the low numbers that existed previously. The reality is that this is the beginning of the racial diversification of Gwinnett County. Of the 235,538 people added to Gwinnett County between 1990 and 2000, 25% were Hispanic, 26% were Black, 35% were White, and 7% were Asian.[58] Figure 20 compares the racial composition of Gwinnett in 1990 and 2000.

[58] U.S. Census 1990, SF1, Table P010 and Table P001, and U.S. Census 2000, SF1, Table P008 and Table P001

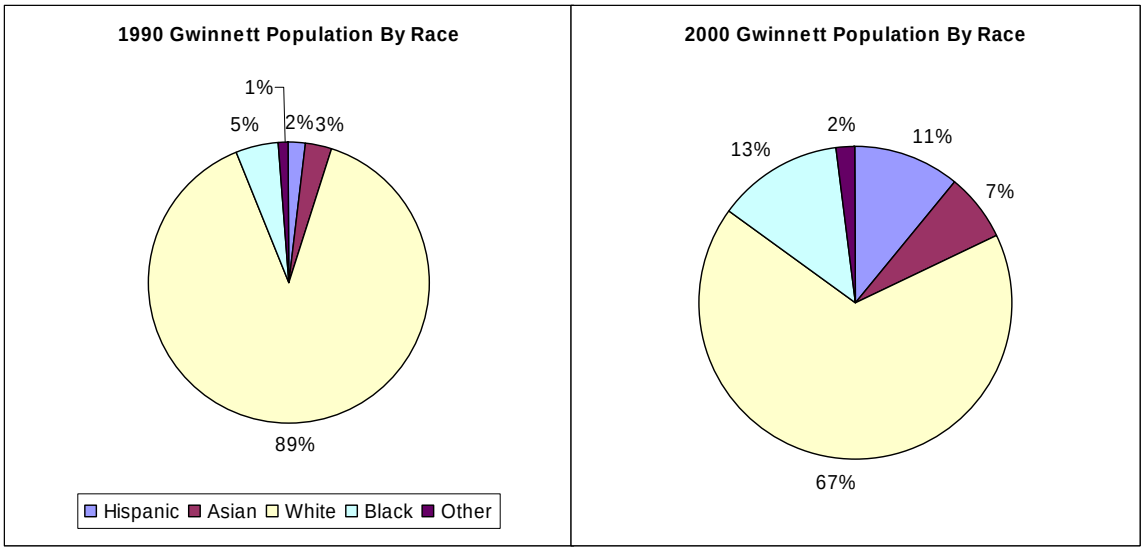

Figure 20 Comparison of Racial Composition of Gwinnett County in 1990 and 2000 (Data Source: U.S. Census 1990, SF1, Table P010 and Table P001, and U.S. Census 2000, SF1, Table P008 and Table P001)

While racial diversification via immigration seems to be a collective phenomenon of second generation suburbs, Gwinnett County has a significantly higher portion of immigrants than other metro counties. Tables 2 and 3 compare Gwinnett County's population to other metro counties and the region as a whole.

Table 2
% of Total Population by Race by County

	% Hispanic	% Asian	% White	% Black
Gwinnett	11	7	67	13
Cobb	8	3	69	19
DeKalb	8	4	36	54
Fulton	6	3	45	45
Atlanta MSA (Region)	7	3	60	29
State of Georgia	5	2	63	29
City of Atlanta	4	2	31	61

Data Source: U.S. Census 2000, SF1, Table P008 and Table P001

Table 3
% of Atlanta Region's Total Population by Race by County

	% of Region's Hispanic Population	% of Region's Asian Population	% of Region's White Population	% of Region's Black Population
Gwinnett	24	31	16	7
Cobb	17	14	17	10
DeKalb	20	19	9	30
Fulton	6	3	45	45
City of Atlanta	18	18	15	31

Data Source: U.S. Census 2000, SF1, Table P008

In 2000, 11% of Gwinnett County's total population was Hispanic compared to other metro counties like Cobb, DeKalb and Fulton, which have 8, 8 and 6 respectively. In fact, Gwinnett County has 24% of the region's Hispanic population and 31% of the region's Asian population,[59] so it appears that there is a reason why these immigrants have chosen Gwinnett County over other places within the Atlanta region. One reason could be jobs, both legal entry level jobs and a significant amount of day-labor jobs for illegal immigrants who support the construction industry, specifically the residential construction industry. 18% of all male jobs in the county are in construction, extraction or maintenance, but as Figure 21 illustrates, this percentage is much higher along the

[59] U.S. Census 2000, SF1, Table P008 and Table P001

southern portion of Buford Highway near Norcross, where the population is poorer and more racially diverse.[60] In the Atlanta region, 74.7% of entry-level jobs are in suburban areas, including Gwinnett.[61]

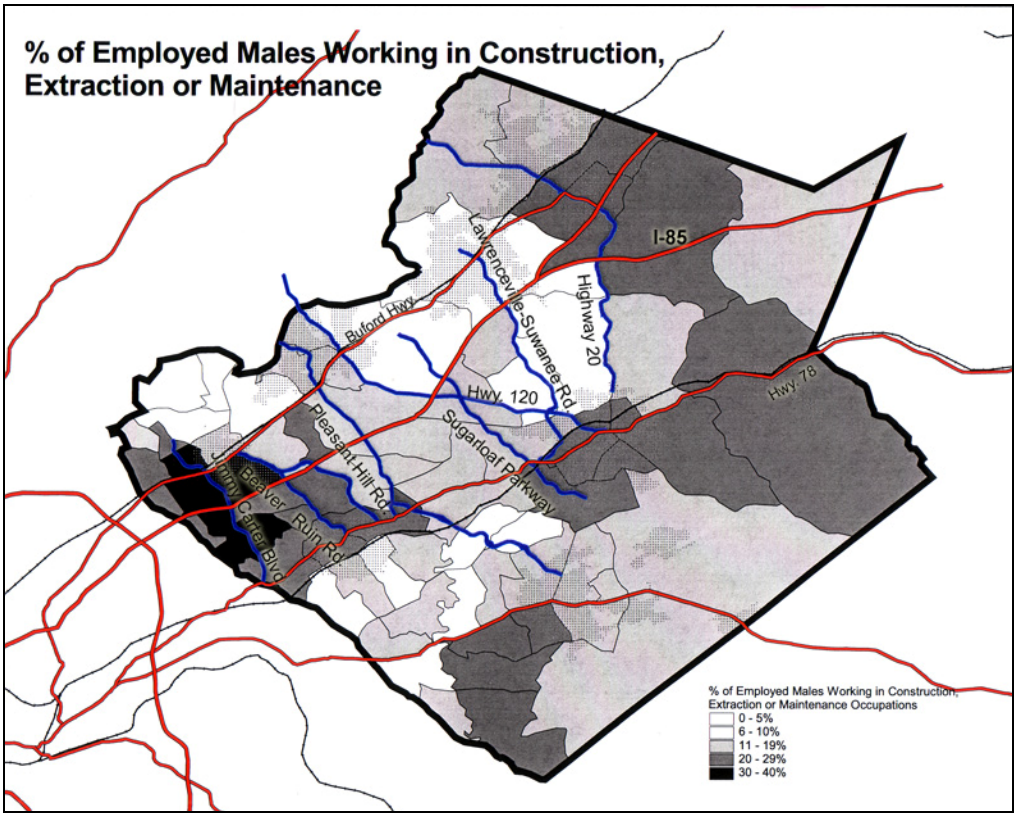

Figure 21 % of Employed Males Working in Construction, Extraction or Maintenance (Data Source: U.S. Census 2000, SF3, Table H050)

A second reason might be access to affordable market housing in the areas surrounding the declining strips. Instead of becoming culturally integrated, the new immigrant population exists in pockets of poverty among Gwinnett's wealthier middle and upper class white neighborhoods as illustrated in Figure 22.

[60] U.S. Census 2000, SF3, Table P050
[61] Sawicki, p.311

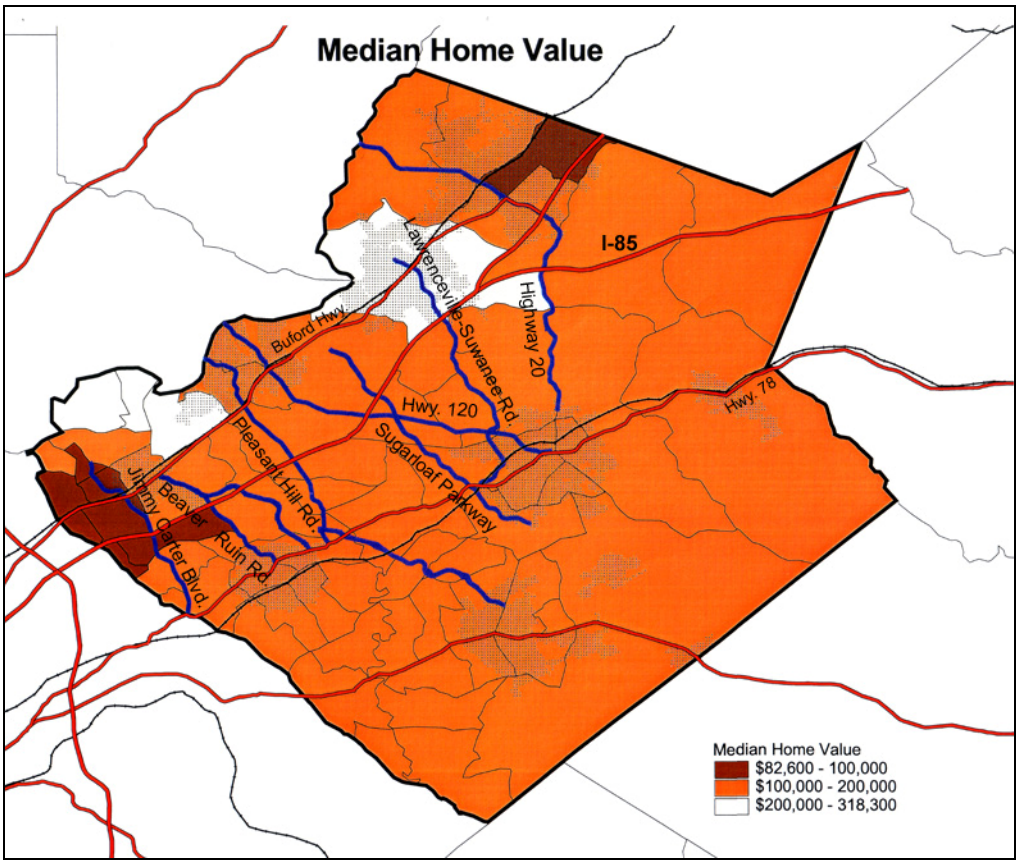

Figure 22 Median Home Values
(Data Source: U.S. Census 2000, SF3, Table H085)

Furthermore, only 29% of the county's total housing units are rental, and they appear to be disproportionately concentrated on along Pleasant Hill Road and other older strips in the southwest portion of the county, while the rest of the county accommodates less than 1% of the county's rental units as illustrated in Figure 23.[62]

[62] U.S. Census 2000, SF1, Table H003, H004 and H005

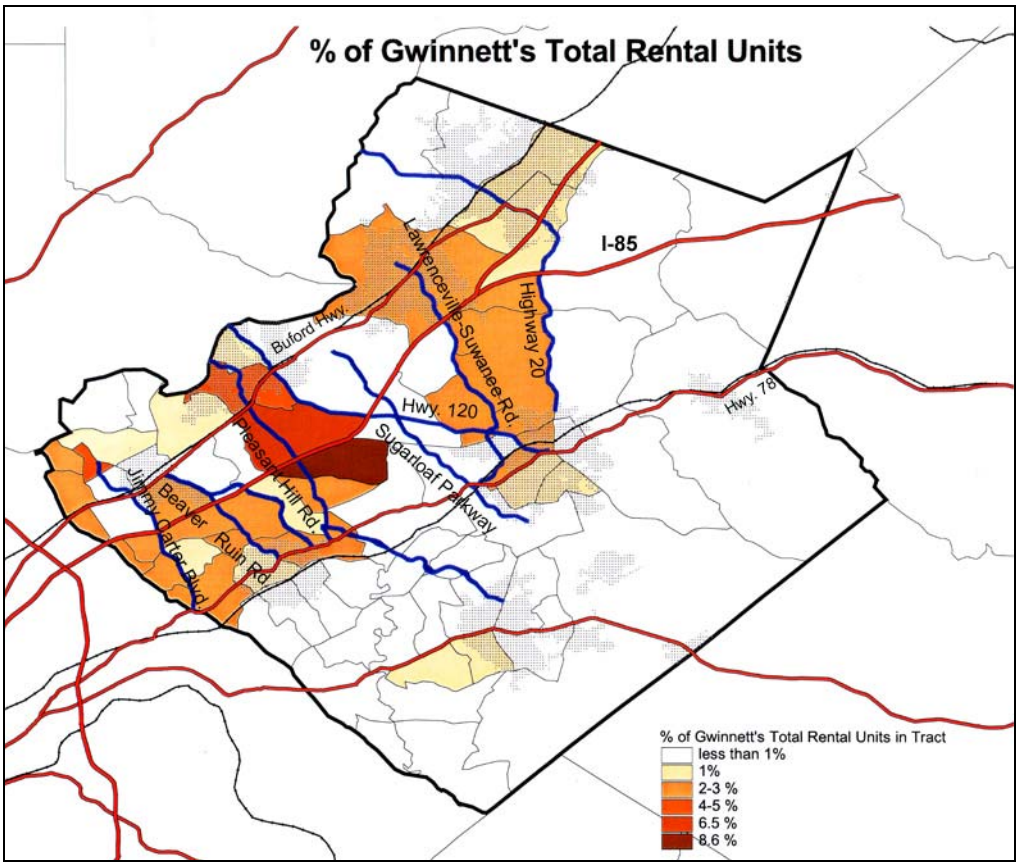

Figure 23 Location of Rental Housing in Gwinnett County
(Data Source: U.S. Census 2000, SF1, Table H003, H004 and H005)

The third probable reason for this dramatic demographic shift may be due to a clustering effect, in which existing immigrants attract new immigrants. A significant demographic shift took place between 1990 and 2000 that changed the racial character of the Buford Highway Corridor in DeKalb County just south of the Gwinnett County line, which is well known for its multiculturalism and concentration of immigrants. In general the corridor is becoming more racially diverse than both the Atlanta MSA and the City of Atlanta, but is also becoming a dominantly Hispanic community, with Hispanics making up 40% of the population.[63] In 2000, 17% of Gwinnett County's total population was born in a foreign country, and 28% of these immigrants live along Buford Highway.[64] 30% of

[63] U.S. Census 2000, SF1, Table P008 and Table P001
[64] U.S. Census 2000, SF3, Table P021

Gwinnett's total Hispanic population and 28% of Gwinnett's total Asian population live along Buford Highway.[65] Immigrants are specifically concentrated along the southern portion of Gwinnett's Buford Highway between Duluth and the DeKalb County line as illustrated in Figure 24.

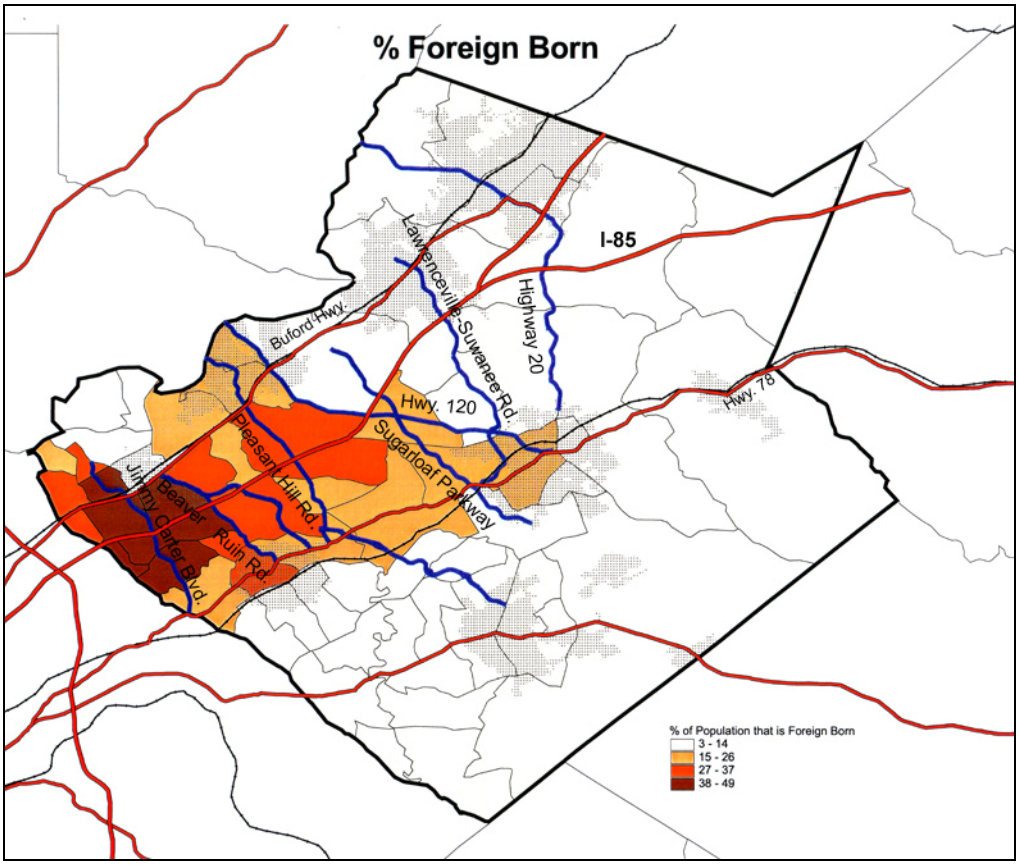

Figure 24 Location of Foreign Born Gwinnett County Residents
(Data Source: U.S. Census 2000, SF3, Table P021)

Both the Atlanta MSA and the City of Atlanta experienced an increase in the percentage of the total population made up by Hispanics between 1990 and 2000, however Tables 4 and 5 describe the dramatic concentration of immigrants along the Buford Highway Corridor relative to the rest of the region.

[65] U.S. Census 2000, SF1, Table P008

Table 4
% Change in Total Population by Race Along Buford Highway 1990 – 2000

	% Hispanic	% Asian	% White	% Black
Gwinnett	657	317	25	327
Atlanta MSA (Region)	370	170	17	10
City of Atlanta	145	148	15	31
Buford Highway Corridor	508	221	13	56

Data Source: U.S. Census 1990, SF1, Table P010 and U.S. Census 2000, SF1, Table P008

Table 5
% of Atlanta Region's Population by Race Along Buford Highway

	% of Region's Hispanic Population	% of Region's Asian Population	% of Region's White Population	% of Region's Black Population
Gwinnett	24	31	16	7
Cobb	17	14	17	10
DeKalb	20	19	9	30
Fulton	6	3	45	45
City of Atlanta	18	18	15	31
Entire Buford Highway Corridor	18	13	4	2
DeKalb Portion of Buford Highway Corridor	11	5	1	1
Southern Portion of Gwinnett Buford Highway Corridor	6	6	1	0
Northern Portion of Gwinnett Buford Highway Corridor	1	1	2	1

Data Source: U.S. Census 2000, SF1, Table P008

While the Atlanta region grew in Hispanics by 370%, the Buford Highway Corridor grew by 508%. The Asian population grew as well by 221% compared the region's 170%.[66] The clustering effect along Atlanta's Buford Highway extending into Gwinnett County illustrates that regional phenomena are not limited by county boundaries.

[66] U.S. Census 1990, SF1, Table P010 and U.S. Census 2000, SF1, Table P008

Quality of Life

The juxtaposition of these immigrants in a landscape that was originally designed to meet the car-oriented lifestyle of the 1960's and 1970's suburbanites is a significant problem. Many immigrants do not have access to a vehicle, the object on which the development patterns were created. As a result many immigrants can be seen walking along arterial roads designed for vehicles where there are no sidewalks or other safety measures or amenities for pedestrians, or more dangerous, crossing arterials where there are no crosswalks within miles. 3% of Gwinnett County households have no access to a vehicle, and this problem is not limited to immigrants. In fact whites make up the largest percentage of households without vehicles, but they also make up the largest percentage of the overall population. When looking at each race individually, the percentage of minorities that do not have vehicles verses whites is extreme. Only 2% of white households do not have access to a vehicle compared to 8% of Hispanic households and 3% of Asian households.[67] Public transportation is limited; therefore, access to jobs and services is also limited and challenging without a vehicle. However, owning a vehicle reduces household income available for housing; therefore, auto-dependent landscapes also reduce the affordability of housing.[68]

The issue of poor quality of life is not limited to immigrants and the poor. "80% of all suburban automobile trips have nothing to do with work at all, but are short drives to places that used to be accessible on foot, such as shops, schools, parks, and friends' houses."[69] This has a profound effect on children and parents living in the suburbs. A child's walkable world is limited to the size of a subdivision, and parents are forced to spend time in traffic chaffering their children.[70]

[67] U.S. Census 2000, SF3, Table H044 and HCT033
[68] Duany, p.57
[69] Duany, p.126
[70] Duany, p.115-133

The situation for these new populations is that the auto-organized framework they inherited offers no alternate choice to reliance on the automobile due to lack of efficient, predictable transit and adequate pedestrian-friendly environments. The result is a serious problem of accessibility of jobs and services for those that can not afford a car, a loss of leisure time for those that can due to congestion, and frustration for those that by choice want to live a less auto-dependent lifestyle but work in Gwinnett.

Another problem with this new, more diverse population inhabiting non-urban organized territory unequipped to accommodate difference in a very low density, non-public environment is evident in recent reports of shootings and home invasions in Gwinnett County. This phenomenon of traditionally urban problems in a suburban territory is best described as it was foreshadowed by Jane Jacobs in the 1960's.

> "Densities of this kind ringing a city area a bad long-term bet, destined to become gray area. As the city continues to grow, the character that makes these semisuburbs reasonably attractive and functional is lost. As they are engulfed and embedded deep in a city, they lose, of course, their former geographical closeness to true suburbs or countryside. But more than that, they lose their protection from people who do not 'fit in' to each other's private lives economically or socially, and they lose their aloofness from the peculiar problems of city life. Swallowed into a city and its ordinary problems, they possess no city vitality to content with these problems."[71]

[71] Jane Jacobs, p.209-210

The Need for Place

The final problem is one that Gwinnett County has defined for itself. That is the problem of defining a center for Gwinnett County. Gwinnett County did a LCI study in 2001, which led to this notion of defining a center for the county. Consultants, Jordan, Jones & Goulding, began their report asking, "Where is Gwinnett's Place? Is it the Gwinnett Place Mall, the Mall of Georgia? the Civic Center? Or is it an interchange on I-85?"[72] County officials believe that the Sugarloaf corridor, where sports and cultural venues are being developed, is becoming the "epicenter." The county recently built a hockey and football arena along the corridor, called Arena at Gwinnett Center, and a large ballroom in the vicinity of the Gwinnett Civic and Cultural Center. Wayne Hill, former chairman of the Gwinnett County Board of Commissioners, expressed that the center could be extended the entire 10-mile stretch between Gwinnett Place Mall and the Mall of Georgia.[73] As Figure 25 shows, this auto-scaled complex is a vast plane of parking and a series of buildings sitting as objects in the landscape instead of forming civic space.

Figure 25 New Gwinnett Civic and Cultural Center – Civic Function without Civic Form

[72] Feagans
[73] Feagans

I believe that there is no one "center" of Gwinnett, but a series of places defined by memory, design, events or rituals that take place there. First there are the places left over from Gwinnett County's earlier layers, the courthouse town and the railroad towns, which are currently being excavated and revised through the LCI process. Then there are the relatively newer places that came about during the highway era, which include the malls and the new arena and civic center and occur along the interstate.

Historically, the significant places in Gwinnett County are signified by building a trail, a road, or a railroad to connect them to other important places, so perhaps Wayne Hill is correct that the center is actually a portion of I-85, but I argue that this is not the type of center Gwinnett County residents are longing for. While the county is trying to create a center out of nowhere, several Gwinnett County cities have created plans for their own "town centers" through the LCI process. I propose that these new "town centers" are an expression of a subconscious human need for place in a placeless culture. Andres Duany summarizes this problem of placeless places in the following passage from his book, *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream.*

> "Each year we construct the equivalent of many cities, but the pieces don't add up to anything memorable or of lasting value. The result doesn't look like a place, it doesn't act like a place, and, perhaps most significant, it doesn't feel like a place. Rather, it feels like what it is: an uncoordinated agglomeration of standardized single-use zones with little pedestrian life and even less civic identification, connected only by an overtaxed network or roadways. Perhaps the most regrettable fact of all is that exactly the same ingredients – the houses, shops, offices, civic buildings, and roads – could instead have been assembled as new neighborhoods and cities. Countless residents of unincorporated counties

could instead be citizens of real towns, enjoying the quality of life and civic involvement that such places provide."[74]

This need for place and livable centers are repeatedly being answered blindly with the aesthetics of New Urbanism, but often without the framework, and possibly without inquiry. As an example of current Gwinnett County placemaking tactics, the City of Duluth recently went through a LCI process in an attempt to develop its railroad town Main Street area into a "town center." The result was investment in sidewalks and bikeways to link parts of the city together and the creation of the Duluth Festival Center and Town Green shown in Figure 26 below, in which summer concerts, outdoor films and other civic events take place. The town green takes on a Disney-like feel with historic looking new buildings, which house a token ice cream parlor and a total of 4 residential units overlooking the perfectly manicured green and fountain. Due to lack of density or transit to support it, the town green functions merely as destination entertainment venue instead of a real town. Duluth's plan is progressing slowly due to difficulty attracting private developers to build around the town green, because it is in competition with Suwanee's "town center", which is located along a newer strip. Thus New Urbanist aesthetics alone can not overcome the problems of strip development.

Figure 26 New Duluth Town Green – New Urbanist Aesthetics without Framework

[74] Duany, p.12

THE PROPOSITION

The proposed solution to these three problems is a light rail line within the existing Southern Railroad right of way, which passes through Buford, Suwanee, Duluth and Norcross, intersects the strips, and parallels Buford Highway. The line includes transit stops, including 10 quarter to a half-mile radius station areas and 1 park and ride / transfer station to tie the system into other transportation networks. Developing this right of way, which already naturally links existing railroad towns together, also provides an opportunity to create connective greenspace in the form of bike and pedestrian trails along the rail corridor. This corridor is a significant place in Gwinnett County's history. As Figure 27 illustrates by overlaying the maps of the different layers of infrastructure from Native American trails to railroads, to highways, this corridor is the natural "center" of Gwinnett County in terms of its significance to multiple cultures in multiple time periods. It was the original high point ridge of the county that has been adaptively reused by every culture that has occupied the land. A greenway along this transportation corridor could be enhanced by public art that conveys the historical layers in some meaningful way that will bring uniqueness and identity to different parts of the corridor.

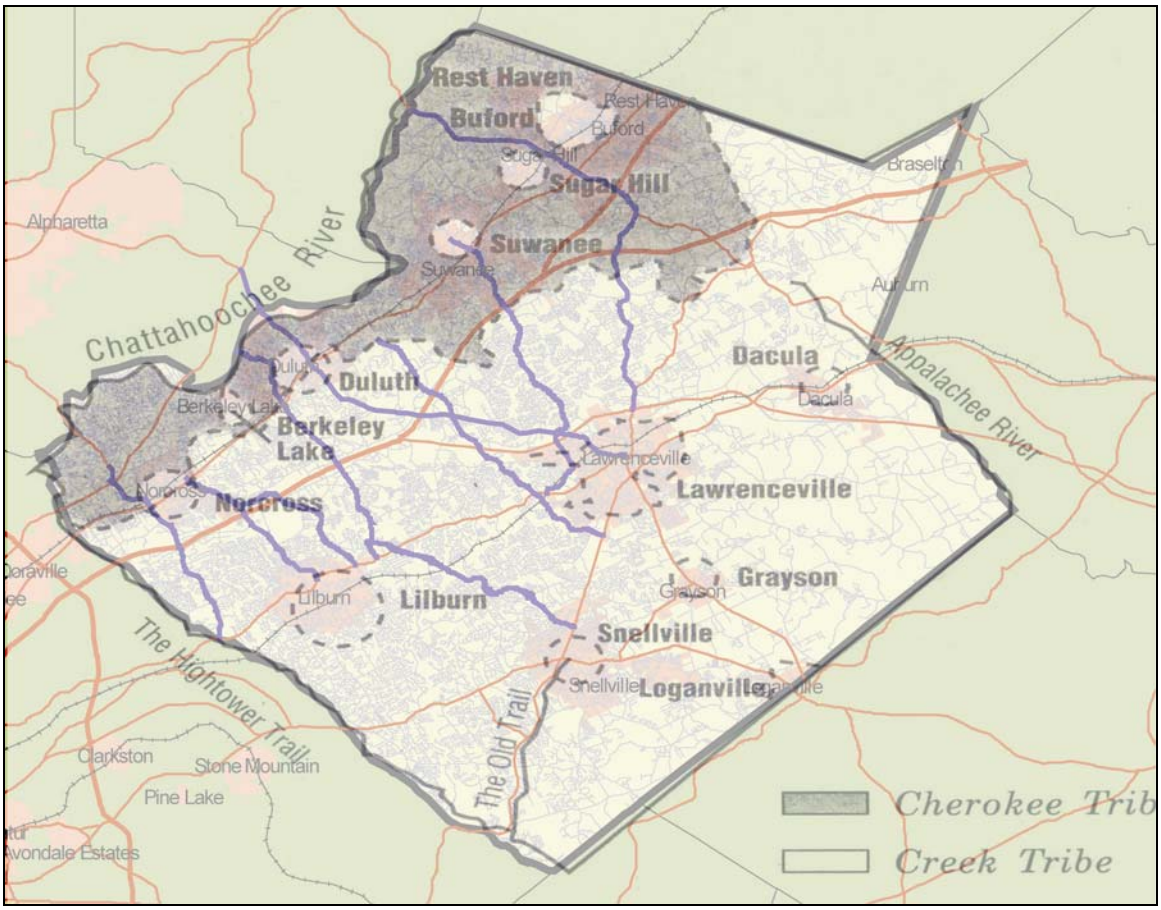

Figure 27 Overlay Map of Historical Layers of Landscape

The identification of this corridor as a logical commuter rail line has been made before. The Georgia Department of Transportation developed a Commuter Rail Plan in 1992, which analyzed 12 existing rail lines for commuter ridership potential and overall feasibility of running passenger rail on existing freight lines throughout the Atlanta region. Of these 12 lines, 6 were identified as strong potential commuter rail line candidates when comparing the capital cost of new infrastructure needed to allow both passenger and freight rail to function simultaneously within the same right of way and projected revenue generated by estimated ridership, the Southern Railroad rail line being one of the strongest. Figure 28 shows the location of these 6 lines.

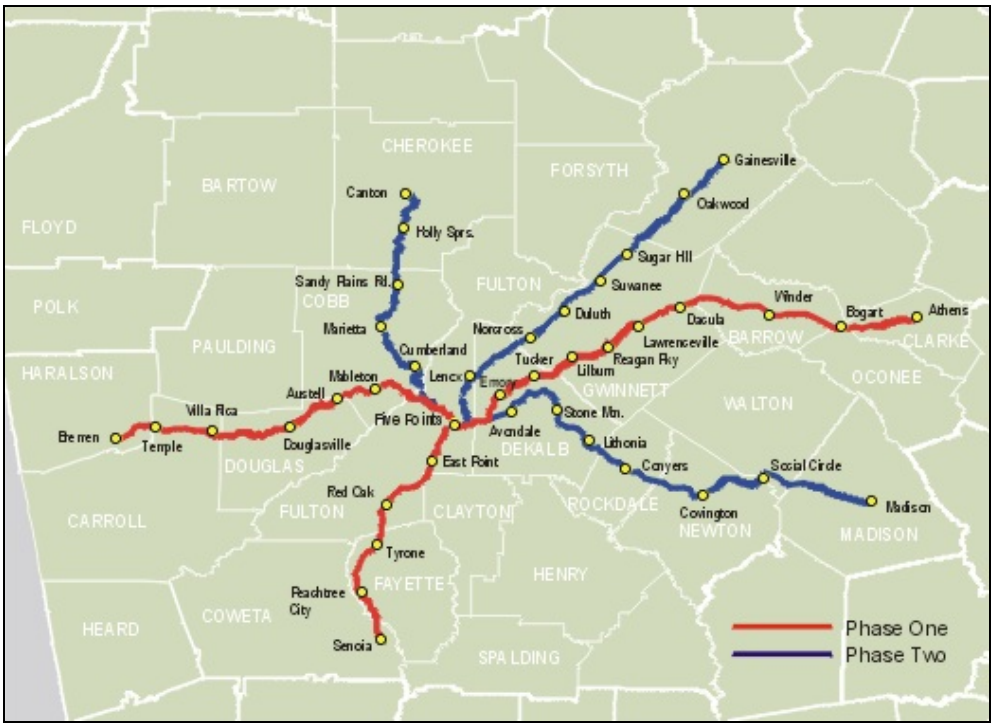

Figure 28 Map of 6 Identified Strong Potential Commuter Rail Line Candidates
(Image Source: Georgia Department of Transportation, Office of Intermodal Programs)

The plan stated that "investing in a commuter rail system that can use existing freight lines makes sense because it is less difficult, costly and time consuming than creating all new corridors." Two of these lines are moving forward, one from Atlanta to Macon and a second connecting Atlanta to Athens via Gwinnett County's Seaboard Air Line rail line. These lines were originally slated in the plan to be running by 2000, but now Gwinnett is hoping the Seaboard line will begin passenger rail service by 2010. The plan called for the Southern rail line to be converted to passenger rail in a later phase stopping in Sugar Hill, Suwanee, Duluth, and Norcross, connecting them to Gainesville to the north and Buckhead to the south. The estimated cost of building this line in conjunction of the two others was $265 million, with $8 million annual operating cost for the three lines. The study projected that 7,040 commuters would use the Southern rail line each day. A cost benefit analysis performed as part of the study indicated that the

Southern rail line had the lowest annualized cost per rider per trip, $5.92, of the 12 lines.[75] Despite these strong indicators supporting a commuter rail line in the Southern rail line corridor, it appears that this proposition has been dropped as a regional priority. In a recent regional transportation plan adopted by the Atlanta Regional Commission in 2003 called "Mobility 2030," only the Athens and Macon rail corridors are designated for commuter rail in the next twenty-five years. Figure 29 shows the proposed route of the Athens-Atlanta commuter rail line. The Southern rail corridor is only targeted for "medium capacity transit" service along Buford Highway, which only goes as far north as Duluth, [76] leaving the rapidly developing northern portion of this corridor completely dependent on vehicles despite the City of Suwanee and some developers' efforts to create more compact and walkable communities. This corridor has an immediate opportunity to develop in a transit supportive way that will insure a more sustainable economic future for Gwinnett County. The regional plan is addressing a future for the I-85 corridor and Seaboard rail line corridor, so Gwinnett County in conjunction with the cities along the Southern rail corridor should not wait for regional action, but should develop a local Gwinnett County light rail system now that will both support and benefit from the region's plans.

[75] Georgia Department of Transportation, Office of Intermodal Programs
[76] Atlanta Regional Commission. *Mobility 2030: Regional Transportation Plan*

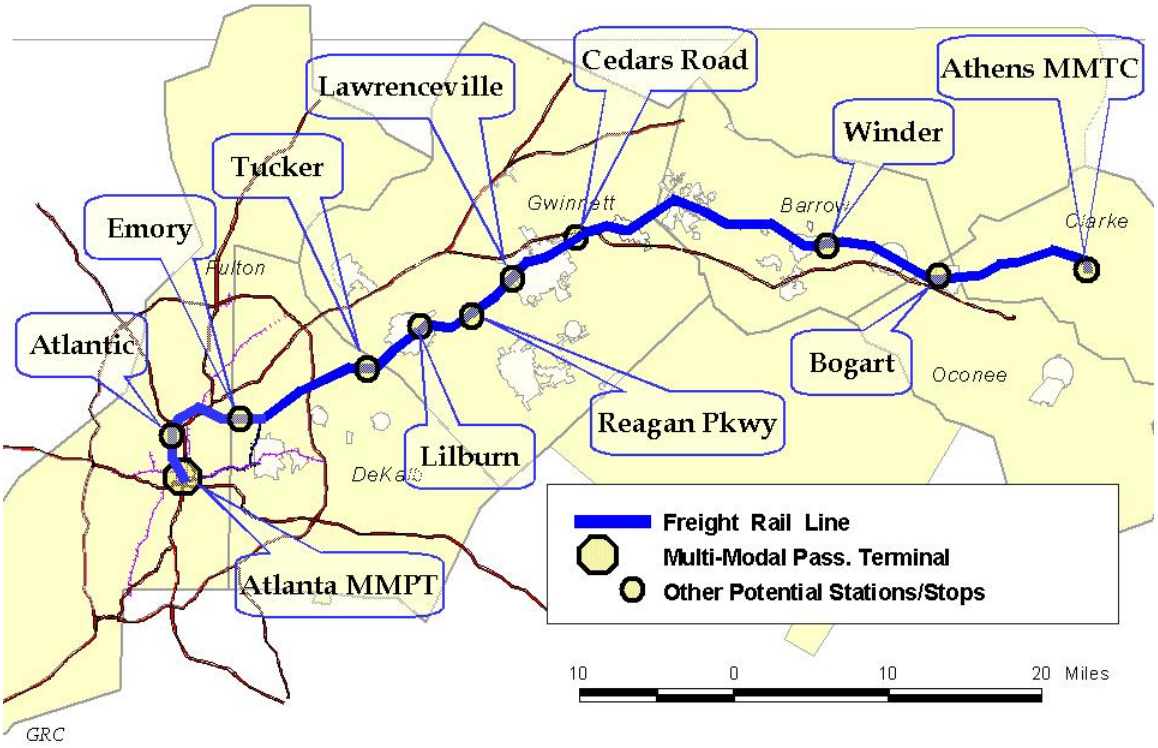

Figure 29 Proposed Route of Athens-Atlanta Commuter Rail Line Along Existing Seaboard Freight Rail Line
(Image Source: Georgia Department of Transportation, Office of Intermodal Programs)

Leading new urbanist, Andres Duany, advocates this strategy for retrofitting the suburbs. He recommends designating regional corridors, preferably rail corridors, which direct growth and provide an opportunity for transit-based development in the manner of historic streetcar suburbs. Next, he suggests the establishment of priority development sectors, which should be organized along transit corridors, and a proactive permitting process to encourage walkable development in the priority sectors.[77] He cautions that "if transit is to work, its users must start as pedestrians," because most commuters will drive all the way to their destination once in the driver's seat.[78]

The 1992 plan envisioned this commuter line as a series of park and ride, or kiss and ride, stations similar to most existing MARTA stations. The plan was for diesel

[77] Duany, p.142
[78] Duany, p.138

powered push-pull bi-level trains to share existing tracks with freight trains in most cases.[79] While this would help with the transportation problem in the region, it would most likely not be able to operate at a frequency that would satisfy more than daily work trips and thus would not create the same quality of life I am proposing. The key difference is that I am proposing more stops and a lighter weight transit system that is both more neighborhood friendly, because it is quieter, able to stop very quickly when necessary, and less polluting, and is able to operate more frequently in both north and south directions, because it is powered by overhead electric power wires and can run on independent steel rails.[80] This light rail system will not only contribute to a commuter rail network by tying into MARTA at the Doraville station, but it will also serve as a local transit system for Gwinnett County by connecting its significant places together. Another significant difference is that I am proposing a particular kind of framework within a quarter to a half-mile radius surrounding each station that will create not just rail stops but actual places where people could walk to and from the station and their destination. Creating rail stations without the framework to support them will only make congestion worse along the arterials and highways that lead to them. The Urban Land Institute agrees that the development of a transit line is an opportunity to create higher density and economic growth around the transit stops, because higher densities strengthen the demand for transit.[81] Furthermore, park and ride strategies do not provide the option of living without a car, which provides choice and potential increased quality of life.

While this proposed transit line serves places that are already served by Gwinnett County Transit buses, it has been demonstrated that ridership increases with a more predictable form of transit with a dedicated right of way. In Portland, a streetcar was implemented replacing a bus route, and ridership on the route grew by 5,200

[79] Georgia Department of Transportation, Office of Intermodal Programs
[80] Boorse, p.14-15
[81] Dunphy, p.8

people.[82] Furthermore, this new line will make the current bus system more efficient. "Adding a light rail transit component to a transit system does not drain passengers from the bus lines…rather, it encourages more people to use both bus and rail transit."[83]

The proposed line will also solve the perpetual problem of strip development and the resulting dying strips by reactivating each strip with a transit node where the rail line intersects each strip as well as tying them together. This will transform growth patterns from horizontal leap frog development to vertical corridors of sustainable growth activated and maintained by transit. Research by the American Public Transportation Association found that "public investment in light rail transit has the ability to stimulate economic growth through private sector development because of the assurance of permanence and appreciation of land value surrounding transit."[84]

Figure 30 from *Suburban Nation*, titled by Duany as "The Townless Highway and the Highwayless Town," illustrates the goal of this proposition, which is to stop unconnected development along highways and to funnel that development into compact towns connected by highways, and in this case, a light rail line as well.[85]

[82] Portland Streetcar
[83] Boorse, p.19
[84] Boorse, p.22
[85] Duany, p.86-87

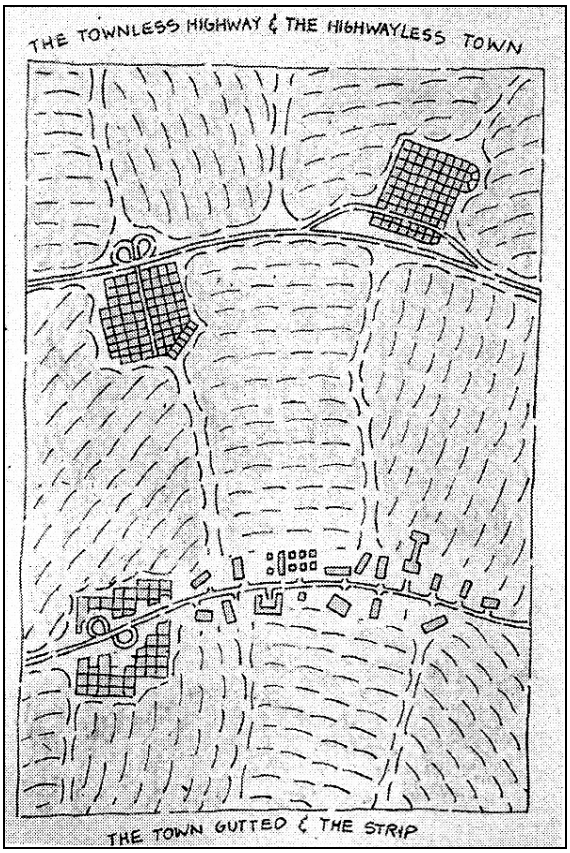

Figure 30 "The Townless Highway and the Highwayless Town"
(Image Source: Duany. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*)

The top highway depicts the proposed development pattern for Gwinnett County, two compact towns that are connected by a highway, and the lower highway looks like most existing strip development along Gwinnett County highways.

THE LOGIC OF THE STATION AREAS

In this dispersed suburban landscape, things happen at intersections. This new light rail line will serve as the public realm that unites these diffused places. To address the problem of the strip, the Urban Land Institute (ULI) developed 10 smart growth principles to help strips reinvent themselves. One of these is the establishment of pulse nodes of development along the strip. These "pulses of development density along the suburban strip will create peaks and troughs of commercial activity that will pump new life into suburban strips."[86] ULI suggests three strategies for developing such nodes:

1. "Use key intersections or major transit stops to create cores of development that are unique points of reference; nodes of intense activity; and places that are friendly, attractive, and walkable – but that differ from each other in character and function, or purpose."
2. Plan and zone higher densities in these nodes of development to facilitate vertical mixed use of three or more stories and to achieve pedestrian concentrations that create a lively, safe, attractive, and entertaining streetscape.
3. Direct public investments and site public facilities such as libraries, schools, cultural facilities, community meeting places, and government administrative centers in the higher-density zones to raise surrounding property values, to encourage higher-value land uses within the zone, and to serve as anchors and inducements for spinoff private investment."[87]

[86] Beyard, p.11
[87] Beyard, p.11

4. "Link the higher-density development districts, where appropriate, with commuter rail, subway and light-rail stations."[88]

Using these principles, a station area for the proposed light-rail line is located where each strip intersects the existing Southern rail line. This will create a higher-density, mixed use node along each strip, thus reactivating all strips simultaneously. This will shift development patterns from being primarily horizontal, constantly moving northward, to vertical, linking new and old strips together and creating more equality among strips.

In addition to these four station areas, four stations are located at each of the existing railroad towns along the Southern rail line. Another station is proposed at Suwanee Station, an existing transit oriented development, which was planned along the Southern Railroad line in anticipation of future passenger rail. Finally, two additional stations were added to fill voids in the coverage of the corridor, so that the entire corridor is within a maximum of a one-mile radius of a station. One of these stations, Berkeley Lake, occurs along an existing road, which is not yet a strip, but like a strip serves as a horizontal connector. The other, Woodward Mill, occurs in the path of a planned extension of a major arterial and has a large amount of undeveloped land surrounding the proposed station. The proposed light rail line is illustrated in Figure 31.

[88] Beyard, p.19

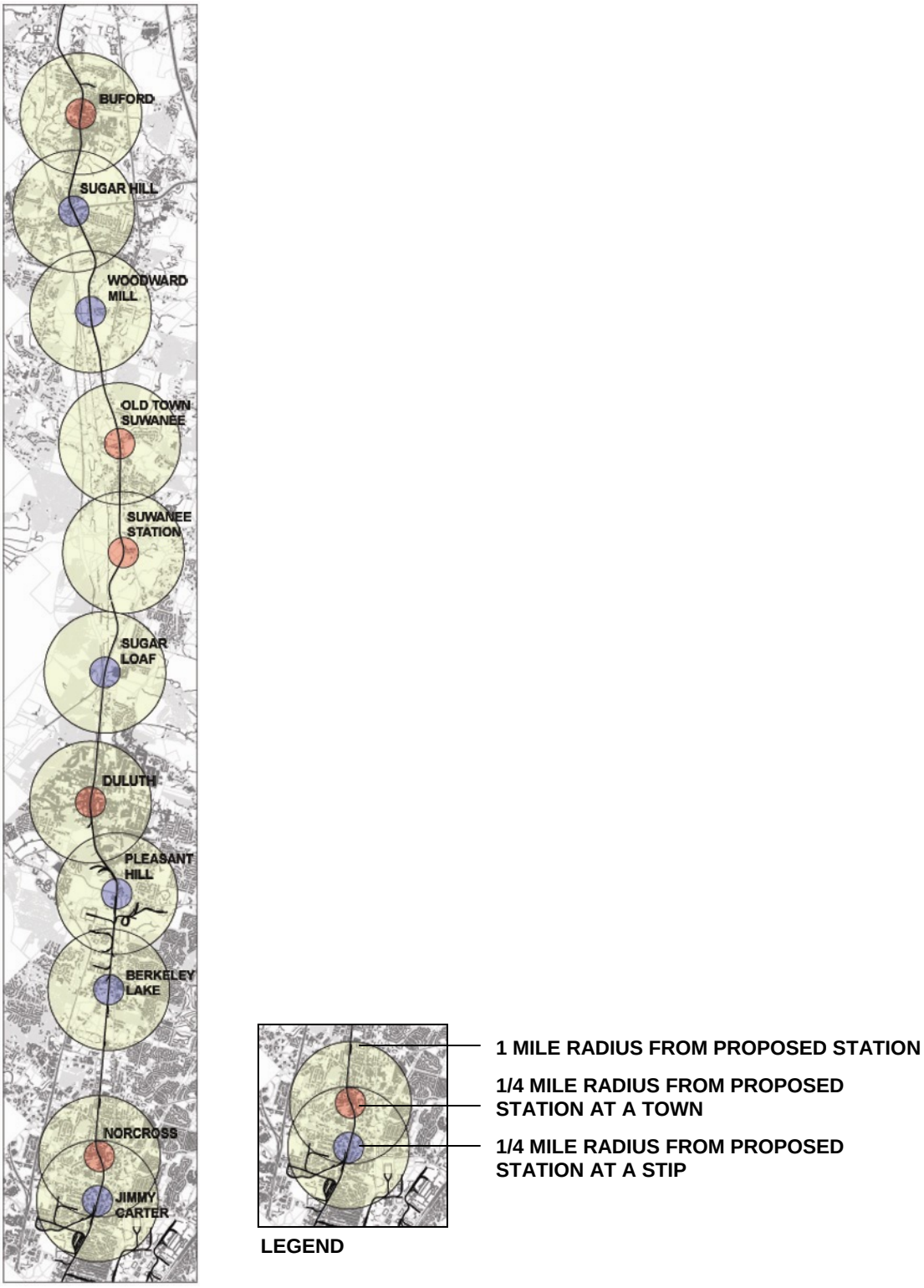

Figure 31 Proposed Light Rail Line

Each station area is composed of a one-mile radius from the intersection of the rail line with either a strip or a town. Within each station area "urban villages" are designated using either a quarter-mile radius or a half-mile radius depending on the context of each station. This dimension is based on the theory of transit oriented development (TOD). The characteristics of a TOD are best summarized in Doug Kelbaugh's influential book, The Pedestrian Pocket. In this book, Peter Calthorpe describes a pedestrian pocket as "a balanced mixed use area within a quarter-mile or a five minute walking radius of a transit station." One of the primary goals of a pedestrian pocket is to promote modal choice including walking, transit and automobile use.[89] The quarter-mile radius is an accepted standard of neighborhood design theory. It was conceptualized in the 1929 New York City Regional Plan, but has been an informal standard since the earliest cities. Andres Duany presents two reasons for the logic of this standard. First, "one-quarter mile is usually the distance from which you can actually spot your destination," and second, "it is the distance short enough that most Americans simply feel dumb driving." Calthorpe suggests that this distance can be expanded to a ten-minute walk, or half-mile radius, in order to provide access to transit from more households.[90]

This proposition borrows a concept from the Seattle Comprehensive Plan known as the "Urban Village." The Seattle Comprehensive Plan defines the Urban Village concept as compact, pedestrian-oriented development, which provides alternative non-motorized transportation choices and incentive and disincentive programs to encourage getting around without a car and affordable housing and neighborhood planning, so people can live, work and shop in their neighborhoods. In 1994, as part of a 20 year plan for accommodating projected growth, the City of Seattle designated different

[89] Kelbaugh. *The Pedestrian Pocket*, p.11
[90] Suburban Nation, p.198-199

neighborhoods within the city with different levels of required growth intensity based on the role they would play in an efficient hierarchical public transportation system and efficient distribution of public goods including affordable housing, economic development and open space. These categories included “Urban Center”, “Hub Urban Village”, and “Residential Urban Village.”[91] Growth requirements were then proportionately distributed among the different designated neighborhoods in the form of a prescriptive number of new housing units each had to accommodate, the sum of which added up to Seattle’s overall projected growth. Then, each neighborhood was given funding to hire consultants to help them determine what strategy to use to increase density in order to accommodate the new units, as well as how to improve open space, strengthen commercial corridors to increase job opportunities, and how to incorporate public transportation. This system is similar to the Atlanta region’s LCI process except the logic is reversed. Instead of communities going through an LCI process and then hoping for transportation projects to be implemented, the transportation element is designed first based on what will serve the most people the most efficiently. Then the affected communities go through a public planning process to decide how they want to accommodate necessary changes. This proposition applies this model on a larger regional scale, in which the Urban Center would be the City of Atlanta, the Hub Urban Village would be each of the 10 immediate light rail station areas, each of which would be composed of multiple Residential Urban Villages.

In 2002, 1,542 housing units were built in this western edge of Gwinnett County, 80% of which were single-family structures, consuming approximately 230 acres. County wide, 8,518 units were constructed consuming 3,057 acres.[92] Imagine if this same amount of growth could be absorbed in compact neighborhoods providing

[91] City of Seattle
[92] Gwinnett County Department of Planning & Development Planning Division

recreational amenities, schools, libraries and services within walking distance of a light rail station connecting the community to similar neighborhoods for work, and variety in shopping, recreation and entertainment, all without having to deal with congested traffic. This is precisely the proposal, to take the equivalent of a year's worth of county growth and organize it into half the land area.

To appropriate a year's worth of growth into individual station areas and urban villages, I researched the following urban design theorists to determine an appropriate density for each area. Regarding net residential density, Jane Jacobs suggests that a true urban environment needs at least 100 dwelling units per acre to achieve adequate vitality and diversity to function as a city. She describes 10-20 dwelling units per net residential acre as a "semisuburb." Neighborhoods at this density would consist of detached single family homes, duplexes, and generously sized row houses, all with generous yards. Lots at 10 dwelling units per acre are approximately 50' x 90'. She claims semisuburbs in this density range can be viable and safe. She warns that between 20 -100 dwelling units per acre, is neither adequate for city life or conducive to suburban life and should be avoided.[93] The Urban Land Institute cites 9 dwelling units per acre as a minimum threshold to support light rail transit.[94] Finally, Allan Jacobs recommends a minimum net residential density of 15 dwelling units per acre to achieve active urban communities.[95]

Based on these theories, the density of each urban village neighborhood was set between 9 and 20 units per acre depending on the amount of developable or redevelopable land available within the quarter to half-mile radius of the station. For example, station areas in more established areas like Jimmy Carter need higher densities on smaller land areas to reach the same number of housing units as a new

[93] Jane Jacobs, p.209-210
[94] Dunphy, p.9
[95] Allan Jacobs, p.304

TOD in a greenfield at Woodward Mill. Each density was calculated by taking the land area in a quarter-mile radius and multiplying that area by 9 units for each acre, the minimum density needed to support light rail transit. The result is the target number of housing units each station area should have. Housing units in existing new or planned developments or historic residences within the quarter to half-mile radius were deducted from the target number. Then the amount of developable land area within each urban village within a station area were calculated. Finally densities for these urban villages were adjusted between 9-20 units per acre until the station area as a whole reached its target number of housing units.

Table 6 indicates the appropriate number of housing units each station area and its urban villages should plan for in order to achieve an adequate density to support light rail transit based on the formula described above. The recommended number of units could be built in all station areas in less than 2 years based on Gwinnett County's previous number of units built per year. Using the housing unit rate for only the western edge of Gwinnett, the proposed new units could be built out in 10 years.

Table 6
Program for Each Station Area

Station Area	Total Redevelopment Area (Acres)	Recommended Average Density (units per acre)	Resulting Total Housing Units
Condition: Crossroads (1/4 Mile Radius)			
Pleasant Hill	**107.5**	**10-11**	**1,132**
Urban Village 1	51.1	10	511
Urban Village 2	7.4	11	81
Urban Village 3	22.2	11	245
Urban Village 4	8.0	11	88
Urban Village 5	18.8	11	207
Berkely Lake	**66.8**	**17**	**1,135**
Urban Village 1	19.1	17	324
Urban Village 2	16.6	17	282
Urban Village 3	15.8	17	269
Urban Village 4	15.3	17	260
Condition: Bridge (1/4 Mile Radius)			
Jimmy Carter	**66.7**	**17**	**1,134**
Urban Village 1	28.6	17	487
Urban Village 2	22.4	17	381
Urban Village 3	9.5	17	162
Urban Village 4	6.1	17	104
Sugar Hill	**107.8**	**10-11**	**1,130**
Urban Village 1	19.5	11	214
Urban Village 2	55.2	10	552
Urban Village 3	15.3	11	168
Urban Village 4	17.8	11	196
Condition: Main Street (1/4 Mile Radius)			
Norcross			**1,128**
Existing Housing Units to Remain (Approx.)			65
Potential Tandom Lot Housing Units			55
Estimate of Potential Conversion Units			40
Neighborhood 1	23.6	11	260
Neighborhood 2	35.4	20	709
Buford			**1,120**
Existing Housing Units to Remain (Approx.)			140
Potential Tandom Lot Housing Units			50
Estimate of Potential Conversion Units			50
Neighborhood 1	48.9	18	880
Condition: Town Center			
Duluth (1/4 Mile Radius)			**1,132**
Units in Towne Park Place (New Development)	9.4	13	122
Existing Housing Units Surrounding Town Green			4
Neighborhood 1	28.9	13	376
Neighborhood 2	26.6	13	346
Neighborhood 3	21.8	13	284
Old Town Suwanee (1/2 Mile Radius)			**2,274**
Suwanee Town Center Proposed Development	52.0		436
Proposed Units Stoneycypher Phase II (New Development)			58
Other Existing Single Family with 1/2 Mile Radius			82
Neighborhood 1	106.1	16	1,698
Condition: TOD (1/2 Mile Radius)			
Suwanee Station			**2,277**
Existing TOD	136.9		337
Paces Property			333
Potential TOD	107.1	15	1,607
Woodward Mill	**293.4**	**9**	**2,640**
Urban Village 1	119.4	9	1,075
Urban Village 2	105.5	9	949
Urban Village 3	68.5	9	616
Total Housing Units			**15,102**

OVERALL DESIGN STRATEGIES FOR ALL STATIONS

Four of Atlanta's intown neighborhoods, Ansley Park, Candler Park, Kirkwood and Morningside, have experienced a drastic rise in property values over the years. These neighborhoods were developed prior to any zoning laws between 1870 and 1923 during the era of streetcars, which linked these neighborhoods to other places. What is important about these neighborhoods, and the reason why they have been conducive to adaptive reuse over time, is that their frameworks were the initial development. This was done not by designing houses and laying them across the land, but by laying out roads, subdividing blocks into lots, and preserving certain lots for public use.[96] This is the recipe I prescribe for each new neighborhood on the proposed transit line.

Many urban design theorists have studied pre-zoning streets, neighborhoods and towns and documented the essential design criteria that give these places a sense of place and make them desirable places to live, work, play and shop, and most importantly walk. Jane Jacobs spent years as a resident and an observer of Greenwich Village in New York City in the 1960's and wrote about what makes an urban neighborhood function successfully in her revolutionary book, *The Death and Life of Great American Cities*. Allan Jacobs conducted a thorough analysis of the "great streets" that exist all over the world and documented the design details that all "great streets" have in common in his book, *Great Streets*. Andres Duany, together with Elizabeth Plater-Zyberk and Jeff Speck, studied traditional early 20th Century neighborhoods and documented why these traditional neighborhoods have a sense of place verses their suburban counterparts in their book, *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. Finally, Peter Calthorpe prescribed the ideal design for successful transit oriented development (TOD), which he branded as the "pedestrian pocket."

[96] Bo Bridgeport Brokers

The four shaping elements of a pedestrian pocket are low-rise, high-density housing, a mixed use Main Street, light rail transit, and shopping. The primary ordering element the pedestrian pocket is the pedestrian scale. Housing should be limited to three stories and offices to four stories. Parking structures should be located behind buildings. The transit station should be located along the Main Street and be bordered by ground floor retail and neighborhood services, providing a horizontal mix of uses. Main Street commercial buildings should have retail on the ground floor and offices above, providing a vertical mix of uses.[97]

Andres Duany cites the following characteristics that distinguish traditional neighborhoods from low-density, auto oriented development:

1. Each neighborhood has a clear center
2. All residents are a five-minute walk from the ordinary needs of daily life: living, working, and shopping
3. A continuous street network, such as a grid made up of small blocks, which provides choice for pedestrians and less congestion for drivers
4. Narrow streets: 2 lanes wide with parallel parking, wide sidewalks, shade trees, and buildings close to the street
5. Mixed use blocks as well as buildings
6. Building are arranged by physical type rather than by use
7. Buildings are setback from the sidewalk to create public space
8. Parking lots are behind buildings
9. Special sites are reserved for civic buildings[98]

[97] Kelbaugh. The Pedestrian Pocket, p.7-16.
[98] Duany, p.15-17

Jane Jacobs prescribes 4 conditions necessary for diversity within a neighborhood district: mixed use, at least 2 primary functions to insure people will occupy the public realm at different times of the day; small blocks; preserved aged buildings, which create diverse socioeconomic conditions; and high density.[99] The Urban Land Institute similarly prescribes the following to create a sense of place when developing around transit: public space, an appealing pedestrian environment, a variety of residential uses to ensure round-the-clock activity, and mixed-use.[100] In the following survey of urban design theory, one will find that these elements are repeated by multiple theorists as criteria for creating a sense of place.

Parks and Open Space

To create high density in a way that creates diversity and vitality in a neighborhood instead of high-rises or social density within housing units, the things which many people fear about density, Jane Jacobs prescribes high density in conjunction with high ground coverage by creating "more numerous streets, lively parks in lively places, and various nonresidential uses mingled in, together with great variations among the dwellings themselves."[101] Similar to the Gwinnett County Conservation Subdivision Ordinance, she suggests that spreading low-rise buildings across the land in compact areas allows for density in a pedestrian scaled environment while allowing other portions of the neighborhood to become open space.[102] This policy could be incorporated in the proposed urban village neighborhoods. However instead of

[99] Jane Jacobs, p.153
[100] Dunphy, p.12-13
[101] Jane Jacobs, p. 218
[102] Recently Gwinnett has been promoting the preservation of green space with the Conservation Subdivision Ordinance, which allows higher density per net acre subdivisions to be developed without rezoning if 40% of the total land area becomes permanent greenspace Source: Atlanta Regional Commission. *Livability for People and* Places: ARC Regional Development Plan Land Use Policies, p.12

preserving unprogrammed, and thus likely unusable, greenspace along the fringe of neighborhoods acting as a buffer, or more precisely a barrier to connectivity, such greenspace should be programmed as parks, plazas, public squares or connective pedestrian greenways, and preserved land should be planned on a more regional level.[103]

Jane Jacobs offers the following 3 principles regarding the planning of open space. First, parks should be surrounded with a mix of uses to attract different users with different schedules to the park at all times of the day.[104] Second, she points out that "greatly loved neighborhood parks benefit from a certain rarity value," and cautions planners to locate parks sparingly so that they don't have to compete for users.[105] Third, every park should have a program, such as entertainment events or specific recreation to attract users.[106]

For the design of parks, Jane Jacobs prescribes 4 characteristics. Parks should have a variety of intricacy at eye level to encourage a variety of users for a variety of multiple repeat visits. Second, each park should have a detectable center that serves as a stage for people. Third, parks should be comfortable in terms of sunny spots for winter and shady spots for summer. Finally, a park should have a sense of enclosure defined by buildings surrounding the space.[107]

Similarly, Duany defines the following 4 criteria for the design of a public square. A square should be the size of a small block. It should be surrounded by public streets lined with buildings to maximize activity and visual supervision. Third, trees should define the square spatially and provide shade at the edges and leave the center open for

[103] Duany, p.32
[104] Jane Jacobs, p.101
[105] Jane Jacobs, p.102
[106] Jane Jacobs, p.108
[107] Jane Jacobs, p.104-105

sun on colder days. Finally, the square should have both paved areas and grassy areas.[108]

Streets

In a thorough analysis of the great streets that exist all over the world, Allan Jacobs found that great streets all have the following characteristics in common, many of which resemble Jane Jacobs's requirements for a great park:

1. Physical comfort, in regard to sun and wind
2. Street definition, both vertically and horizontally by street walls formed by buildings, walls or trees
3. Trees
4. Buildings of similar heights
5. Diversity of buildings
6. Transparency or a sense of human presence in building facades
7. Minimal parking
8. Accessibility via frequent cross streets
9. Mix of land uses[109]

Similarly, Duany notes that the streets of early 20th Century traditional neighborhoods have the following characteristics:

1. A maximum street width to building height ratio of 6:1
2. Street trees for shade and sense of enclosure

[108] Duany, p.33
[109] Allan Jacobs, p.274-306

3. Garages at the rear of lots accessed by alleys to allow lots to be narrower, which allows a greater variety of building facades, creating more pedestrian interest
4. Visual interest by placing buildings of different sizes and types side by side[110]

Duany notes that streets within desirable traditional neighborhoods are 24 feet wide, and "skinny streets," such as some in Portland, can be appropriate in residential areas and can be as narrow as 20 feet wide even with parallel parking on one side.[111] He recommends that travel lanes within a neighborhood be a maximum of 10 feet wide and on-street parking lanes be a maximum of 7 feet wide.[112] Table 7 below lists Duany's standards for each type of street.

Table 7
Andres Duany's Prescribed Street Types

Street Type	Street Width	Description
Main Street	34 feet	1 lane in each direction with parallel parking on both sides
Avenue	46-56 feet	1 lane in each direction on each side of a tree lined median 1 lane of parallel parking on each side of the median
Through Street	27 feet	1 lane in each direction with parallel parking on 1 side
Standard Street	24 feet	
Local Street	26 feet	for medium density areas
Local Street	20 feet	for low density areas
Commercial Alley	24 feet	in 24 foot right of way
Residential Alley	12 feet	in 24 foot right of way

Source: Duany, p.249-250

[110] Duany, p.73-82
[111] Duany, p.68-69
[112] Duany, p.204

Buildings

Duany emphasizes that the critical contribution of buildings to a street is the volume of the building and its relationship to the street.[113] To illustrate this point, one need only to look at some of the prevailing typologies of Gwinnett County's past: the two or three-story storefront building, Main Street, or the courthouse square. Each of these types remains in the landscape today because the street or public space and the buildings that define it are dependent upon each other.

Allan Jacobs observed a common ratio of building heights to street widths in the range of 1:1.1 to 1:2.5 in all the great streets he documented. He suggests that the ratio should be at least 1:4 to provide a sense of street definition. In terms of a building height limit, he claims the best streets have building heights under 100 feet. The tighter buildings are spaced the greater the street definition. Jacobs suggest 10-20 as maximum spacing.[114]

Duany stresses that in order to "feel like a room, a street must have relatively continuous walls," made up of primarily flat and simple building façade, whose design calls attention to the space as a whole rather than to individual buildings."[115] These buildings should "sit close to the sidewalk and plainly face forward."[116] He recommends that residential setbacks should range from 10 feet near the neighborhood center to 30 feet at the neighborhood edge, however semi-private elements including front porches, balconies, stoops and fences should be permitted within the setback.[117] These elements are essential to provide visual and psychological transition between the public and private realms. Retail buildings should have a zero setback and sit directly on the

[113] Duany, p.26
[114] Allan Jacobs, p.279-281
[115] Duany, p.75
[116] Duany, p.73
[117] Duany, p.205

sidewalk.[118] All theorists agree that buildings should have a sense of transparency via frequent windows and doors along the street.

Buildings should be of similar heights and should change mid-block not mid-street. [119] Duany elaborates on this concept by adding that housing types should be segregated by street, with the transition occurring mid-block where backyards meet. This system preserves property values in the same way that single-income subdivisions do by facing townhomes to townhomes, single family to single family, and apartments to apartments, but unlike its counterpart, it does not isolate people from one another. The same sidewalks, parks and corner store serve everyone. [120]

Trees

Trees can also help define a street or public space. According to Allan Jacobs, trees are the most important element in creating a great street, because they provide comfort, light and movement, which create visual interest for pedestrians, and serve to separate pedestrians from vehicles. Jacobs suggests the most effective tree spacing is 15-25 feet apart[121] and Duany recommends 30 feet apart.[122]

Sidewalks

The third component of streets is sidewalks. The Oregon Bicycle and Pedestrian Plan requires a minimum sidewalk width of 6 feet, exclusive of curbs and obstructions, and a 5 foot wide or greater planting strip between the road and the sidewalk. These planting strips provide space for street trees, landscaping, signs, fire hydrants and other

[118] Duany, p.252
[119] Allan Jacobs, p.286-288
[120] Duany, p.46-47
[121] Allan Jacobs, p.293-294
[122] Duany, p.251

street furniture that would otherwise obstruct the sidewalk path.[123] Duany suggests a 4 to 5 foot sidewalk with a 5 to 10 foot planting strip for non-commercial streets. For shopping streets, or Main Streets, Duany recommends a sidewalk width of 12 to 20 feet.[124]

Blocks

Jane Jacobs discourages the use of superblocks and isolated paths in favor of smaller blocks with more streets, which will increase pedestrian choice of routes and open up the neighborhood. She argues that more than one path will encourage a diversity of pedestrians coming from different locations, which will make streets more lively, thus making them more desirable places to be.[125] The pedestrian friendly and transit-supportive environment of Portland, Oregon is attributed to its interconnected grid made up of small, uniform 200 foot blocks.[126] Allen Jacobs agrees that great streets must be highly accessible to pedestrians and notes that many great streets have an entrance, or intersection, every 300 feet. Block sizes of some of great streets of walkable European and American cities like Boston and Manhattan have median block sizes ranging from 150 to 350 feet.[127] Duany also emphasizes the importance of small blocks and suggests that blocks be less than 600 feet in length and 2000 feet in perimeter[128] and intersections occur every 300 feet.[129] In order to make intersections safer for pedestrians, Duany states that the radius of curbs at intersections should be only 3 or 4 feet, which reduces the crossing distance for the pedestrian and forces automobiles to slow down to make turns.[130]

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[123] City of Portland. *Bicycle and Pedestrian Plan*, p.91-92
[124] Duany, p.250-251
[125] Jane Jacobs, p.178-186
[126] Frank, p.26
[127] Allan Jacobs, p.302, 262
[128] Duany, p.249
[129] Duany, p.195
[130] Duany, p.68-69

Lots

Smaller lots help bring diversity and a sense of history to a place. Allan Jacobs notes the greater the number of buildings the better, because "with more buildings and owners change is more likely to come incrementally rather than all at once," which adds visual interest as well as the likelihood of more socioeconomic diversity.[131] Duany claims that the dimension of a townhome lot, 24 feet wide, is ideal for this kind of incremental development, because the lot can accommodate a home, a business or both.[132] Duany adds that the short side of lots should face the long side of a block, so that houses face the longer side, which adds more visual interest and makes the long side of the block feel shorter.[133]

Mixed Use

All sources agree about the necessity of a mix of land uses. Peter Calthorpe suggests that the appropriate mix in a transit oriented development include 10%-15% public use, 10%-40% core/employment, 50%-80% residential, and 5-10% of the entire site acreage should be devoted to public open spaces. A combination of small village parks, medium sized neighborhood parks, and larger community fields should be included.[134] Duany prescribes that a new town should contain a neighborhood-scale shopping center to meet everyday needs. A survey asking consumers what they desire in a neighborhood found that the majority of respondents wanted a small cluster of shops, a small library and small parks in their neighborhoods,[135] which can all be found in Atlanta's traditional neighborhoods built prior to the Zoning Enabling Act. In today's modern society, there are few reasons to perpetuate zoning in the name of incompatible

[131] Allan Jacobs, p.297
[132] Duany, p.170
[133] Duany, p.195
[134] Calthorpe, p.63, 91
[135] Duany, p.104

uses. Use is secondary to form, because good urban form will be adaptively reused over time potentially with an entirely different use, such as the current reuse of warehouse buildings for residential. It is a consistent streetscape, and the consistent relationship of buildings to that streetscape, that make different uses sitting next to one another compatible.

Parking

Allan Jacobs's study found that "driveways off of the best streets, or garage entrances for access to parking or for service, are rare."[136] The Puget Sound Regional Council has developed several parking management guidelines that successful transit oriented developments must employ, such as:

1. Surface lots must be kept small.
2. The development of parking structures must be encouraged.
3. The development of street-side edges of parking structures should be encouraged.
4. Parking facilities should be located behind buildings or in the interior of a block
5. The joint-use of parking garages should be encouraged[137]

Many of the great streets that Allan Jacobs observed included on-street parking, but "parking in great amounts, to any contemporary standard, is not a characteristic of great streets."[138] It is therefore recommended that parking requirements within the station areas be reduced in favor of an environment more conducive to pedestrians. A reduction of parking is feasible due to the proximity to transit, and this will likewise

[136] Allan Jacobs, p.306
[137] Puget Sound Regional Council
[138] Allan Jacobs, p.306

encourage transit ridership. Table 8 illustrates the reduced parking requirements used in the Lindbergh Center TOD developed recently in Atlanta compared to what non-TOD developments require.

Table 8
Lindbergh Center TOD Parking Ratios

Land Use	Lindbergh Center TOD Parking Ratios	Parking Ratios per Zoning Requirements
Retail	3.7/1000 square feet	5 / 1000 square feet
Office	2.5/1000 square feet	3 / 1000 square feet
Residential	1.5 per unit	1.4 – 2.5 per unit

Source: Greg Miller, Cooper Carry

The Urban Land Institute agrees that "typical suburban standards for parking and road access are excessive for development around transit and can undermine the site's pedestrian orientation and sense of place."[139] Duany suggests using 3 spaces for every 1000 square feet of construction including on-street parking for mixed use neighborhoods. This number is based on the concept of shared parking between uses. Additionally, Duany offers the following rule of thumb regarding parking. "Provide no more off-street parking than can be concealed behind buildings, and no more buildings than that amount of parking can support."[140]

Affordable Housing

One of the principles of New Urbanism is for neighborhoods to be mixed income as well as mixed use. The following housing types can be used to incorporate more

[139] Dunphy, p.13
[140] Duany, p.208

affordable housing into the medium density neighborhoods I am proposing: townhomes, carriage houses, apartments above shops, and live/work units.[141] Duany claims that a neighborhood can absorb 1 unit of affordable housing per every 10 units without adverse effects.[142]

Neighborhoods

The fact that these proposed Southern rail line neighborhoods are being created in the midst of high-traffic arterials and highways cannot be ignored. The Urban Land Institute describes two ways to deal with an arterial when creating a community. First, an arterial can serve as a "seam," which "knits the community together across the arterial." This requires the alteration of the arterial to reduce speeds to 30 to 35 miles per hour, and generally create a median down the center.[143] This strategy should be applied to all strips where they pass through station areas. Since the station areas are pulse nodes along the strips, vehicle traffic will be able to move at faster speeds in between station areas and future nodes developed along the strip, but can slow down and allow for existing pedestrian and freight rail crossing, as well as the new light rail crossing in the same way that one currently slows down as one passes through an existing small town along a rural highway. This will also help support retail within the station area by slowing down potential consumers allowing them to distinguish what is there from other portions of the strip.

The second way to deal with an arterial is to respect it as an "edge" and "not try to connect or integrate land uses, urban design, or community activities on both sides of the arterial."[144] I propose that this is appropriate along Buford Highway and Peachtree

[141] Duany, p.50-57
[142] Duany, p.53
[143] Beyard, p.12
[144] Beyard, p.12

Industrial with the exception of the two railroad towns that have already created town centers along Buford Highway. Unlike the strips, these roads parallel the rail line and never intersect it. To limit speed along these roads would hinder vehicles for the entire length of the road instead of simply at pulse nodes along it; therefore, these roads would better serve as neighborhood boundaries.

Duany provides two options for sites large enough to hold multiple neighborhoods. First, neighborhoods can be separated by a greenbelt, in which case each remains a village with its own neighborhood center. Second, neighborhoods can be adjacent to one another and share a boulevard at their seam, which serves as the town center for all of the neighborhoods. [145]

In the first case, in which each neighborhood has its own center, densities and building heights should be highest at the center and decline as one moves away from the center. Individual neighborhood centers within a station area should be connected to one another with avenues. Neighborhood centers should contain shops and a major public space. In the second case, in which multiple neighborhoods collectively share a center as a town, the highest densities and building heights should occur along the seam between the neighborhoods, which is the Main Street of the town. Shops, a major public space, and a transit center should be located along this Main Street. Larger streets, which lead to the Main Street, should divide up the station area into individual neighborhoods serving as boundaries to the neighborhoods. For both options there should be only small residential streets within each neighborhood, and each neighborhood should have one local pocket park located within a three-minute walk, or one-eighth mile, of every housing unit, which is no bigger than a single house lot. [146] Additionally, Duany recommends that each neighborhood center should reserve at least

[145] Duany, p.199
[146] Duany, p.201-202

one prominent site for a civic building and another for a civic space in the form of a public square, plaza, or green. He suggests that an elementary school be sited within 1 mile of every home; therefore, each station area should have its own elementary school.[147]

Light Rail

The Urban Land Institute recommends transit stops should be located at the center of a neighborhood rather than on its periphery, so that it can be surrounded by activity on all sides.[148] This should be the goal where the existing rail right of way has redevelopable land available on both sides of the tracks. The location of each rail stop shall be the center of each station area.

Light rail tracks can be built at grade level as shown in Figure 32, underground to pass under existing railways as shown in Figure 33, or aerial tracks can be built above existing railways.[149] At grade boarding should be the preferable option within each transit village via simple platforms, however where right of way is narrow and existing infrastructure limits this configuration, such as within the existing railroad towns, tracks can be located underground and accessed via stairs and elevators through a depot building that will enhance the Main Street of the town. Aerial tracks should be limited to areas between urban villages where right of way is limited and underground tracks are not feasible.

[147] Duany, p.248
[148] Dunphy, p.12
[149] Boorse, p.11

Figure 32 Photo of Light Rail at Grade
(Photo Source: Boorse.Transportation Research Board)

Figure 33 Photo of Light Rail Underground
(Photo Source: Boorse.Transportation Research Board)

This survey of urban design theory is summarized on the following pages in Table 9, which outlines a set of design guidelines for all station areas based on a selection from or combination of what is prescribed by each theorist for each aspect of neighborhood design.

Table 9
Design Guidelines for Proposed Station Areas

		J. Jacobs Greenwich Village	Duany TND	A. Jacobs Great Streets	Calthorpe TODs	Other Source	Design Guidelines for Proposed Station Areas
Density							
	Recommended Density	10-20 units per acre = single family homes, duplexes, and row houses with generous yards = viable and safe		15 units per acre = active urban community		9 units per acre = threshold for supporting light rail transit Source: ULI	9-20 units per acre
Parks & Open Space							
	General Planning and Design Strategies	1. surround with buildings w/ a mix of uses 2. locate parks sparingly 3. program each park 4. variety of intricacy at eye level 5. detectable center/stage 6. sun and shade	pocket parks: 1. no larger than a residential lot 2. locate 1 within 1/8th of a mile from every home public square: 1. size of small block 2. trees define the edges 3. center open to sun 4. paved areas and grass		combination of small village parks, medium size neighborhood parks, and larger community fields		1. Provide 1 pocket park with playground equipment within 1/8th of a mile of every home the size of a single residential lot 2. Provide 1 public square, plaza or green approximately the area of a block per station area. This should have a detectable center or stage and should be surrounded with a mix of uses. 3. Provide at least 1 recreational field per station area 4. All parks, squares, plazas and greens should have buildings facing them, incorporate sun, shade, pavement, and grass
Parking							
	General Parking Strategies		1. conceal parking behind buildings 2. use shared structured parking 3. use on-street parking 4. access parking from alleys or the rear of the building 5. surface parking should provide 1 tree for every 10 cars	minimize parking	locate parking behind buildings	1. locate parking behind buildings or in interior of block 2. use shared structured parking 3. keep surface lots small Source: Puget Sound Regional Council	1. conceal parking behind buildings or in the interior of block 2. use shared structured parking 3. use on-street parking 4. access parking from alleys or the rear of the building 5. surface parking should be kept small and provide 1 tree for every 10 cars
	Parking Ratios		Mixed Use = 3 spaces per 1000 square feet of development (including on-street parking)			Retail = 3.7 / 1000 SF Office = 2.5 / 1000 SF Residential = 1.5 / unit Lindberg Center TOD, Atlanta, GA	Retail = 3.7 / 1000 SF Office = 2.5 / 1000 SF Residential = 1.5 / unit
Blocks							
	Block Size		less than 600 feet in length and 2000 feet in perimeter	150-350 feet		200 feet X 200 feet Portland, OR	200 feet X 300 feet
	Intersection Frequency		every 300 feet	every 300 feet			approximately every 300 feet max. Approximately 660 feet along Boulevards to satisfy DOT standards
	Curb Radius		best 3-4 foot max. 10 foot				4 foot
Lots							
	Single Family Lots	For density of 10 units per acre, lot size is 50 feet x 90 feet					50 X 88 feet
	Townhome Lots		24 feet wide				24 feet wide
	Orientation		short side of lots should face long side of blocks				short side of lots should face long side of blocks

Table 9
Design Guidelines for Proposed Station Areas (Continued)

		J. Jacobs Greenwich Village	Duany TND	A. Jacobs Great Streets	Calthorpe TODs	Other Source	Design Guidelines for Proposed Station Areas
Streets							
	Travel Lanes		10 feet wide max.				10 feet wide max.
	Parallel Parking Lanes		7 feet wide max.				7 feet wide max.
	Boulevards					Neighborhood Boundaries / Edges	apply to Buford Highway and Peachtree Industrial
	Main Street		34 feet wide				34 feet wide
	Avenue		36 feet wide + 10-20 foot wide median			Neighborhood Seams max. speed = 35 mph median in center	apply to strips
	Neighborhood Streets		24 feet wide (parallel parking allowed on both sides, but not striped)			"Skinny Streets" = 20 feet wide (parallel parking on one side, but not striped) - Portland, OR	24 feet wide (parallel parking allowed on both sides, but not striped)
	Commercial Alley		24 feet wide in 24 foot right of way				24 feet wide in 24 foot right of way
	Residential Alley		12 feet wide in 24 foot right of way				12 feet wide in 24 foot right of way
Sidewalks							
	Shopping Street Sidewalks		12-20 feet (includes "planting strip," which should be hardscaped on Main Streets)				Main Streets and Avenues = 15 foot wide sidewalks and no planting strips
	Clear Pedestrian Zone		4-5 feet min.			6 feet min. Source: Oregon Bicycle and Pedestrian Plan	Neighborhood Streets = 5 foot wide sidewalks Boulevards = 6 foot wide sidewalks
	Planting Strip (for trees, lighting and other street furniture)		5-10 feet			5 feet min. Source: Oregon Bicycle and Pedestrian Plan	Neighborhood Streets = 5 feet wide planting strip Boulevards = 10 foot wide planting strips
	Street Trees		30 feet apart	15-25 feet apart			25 feet apart
	Street Lights		30 feet apart single family residential streets = only at intersections				25 feet apart Neighborhood Streets = only at intersections

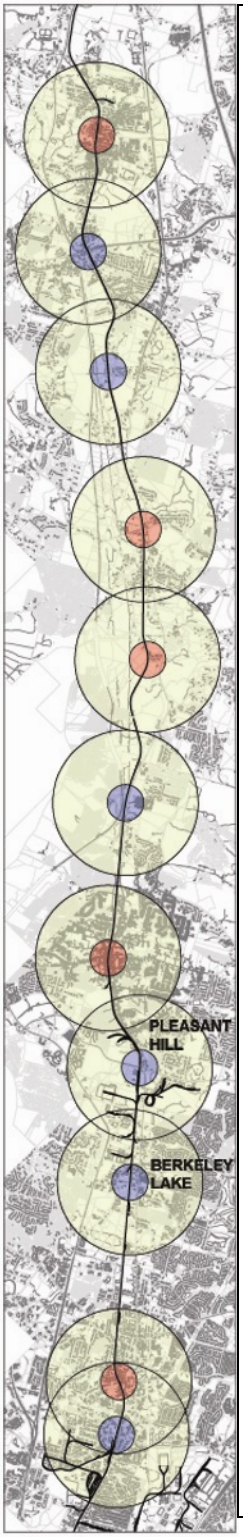
Table 9
Design Guidelines for Proposed Station Areas (Continued)

		J. Jacobs Greenwich Village	Duany TND	A. Jacobs Great Streets	Calthorpe TODs	Other Source	Design Guidelines for Proposed Station Areas
Buildings							
	Building Types	1. preserve aged buildings 2. transparency in building facades by frequent doors and windows	1. place different sizes and types of buildings side by side 2. change building type and size midblock at alleys, not midstreet 3. ground floor retail buildings should be 65% transparent and upper stories should be 35% transparent 4. affordable housing types: townhomes, carriage houses, apartments above shops, and live/work units	diversity of buildings transparency in building facades by frequent doors and windows	Main Street buildings should have ground floor retail or neighborhood services with office above		1. place different sizes and types of buildings side by side 2. change building type and size midblock at alleys, not midstreet 3. Main Street or Avenue buildings should have ground floor retail or neighborhood services with office or residential above 4. ground floor retail buildings should be 65% transparent and upper stories should be 35% transparent 5. affordable housing types: townhomes, carriage houses, apartments above shops, and live/work units 6. adaptively reuse historic buildings
	Building Height to Street Width Ratio		1:6 max.	great streets = 1:1.1 - 1:2.5 1:4 max.			1:1.1 - 1.2.5
	Building Height	low-rise buildings	1. min. 2 stories except single family 2. buildings should be similar heights to buildings across the street	max. 100 feet buildings should have similar heights	residential = 3 stories max. office = 4 stories max.		1.min. 2 stories except single family 2. max. building height it 100 feet 3. buildings should be similar heights to buildings across the street
	Building Spacing Along a Street			0 - 10-20 feet max. the tighter the spacing the better the street definition			0-20 feet
	Retail Building Setbacks from Back of Sidewalk		no setback				0 setback from the back of the sidewalk
	Residential Building Setbacks		1. 10-30 feet (the closer to the neighborhood center, the closer the home should sit to the sidewalk) 2. single family homes should set back 1/4 of the width of the lot 3. front porches, balconies, stoops and fences should encroach within the setback				1. 10 foot setback from the back of the sidewalk 2. front porches, balconies, stoops and fences should encroach within the setback
Land Use Mix							
	Towns	mixed use blocks as well as buildings	1. mixed use blocks as well as buildings 2. reserve at least one prominent lot for a civic building 3. there should be 1 elementary school within 1 mile of every dwelling 4. town centers should contain shops, a major public space in the form of a square, plaza or green, and a transit center	mix of uses	1. mixed use main street 2. TOD land use mix: 10-15% public, 10-40% core/employment, 50-80% residential, 5-10% open space		1. mixed use blocks as well as buildings 2. reserve at least one prominent lot for a civic building 3. provide 1 elementary school per station area 4. town centers should contain shops, a major public space in the form of a square, plaza or green, and a transit center 5. land use mix for entire station area: 10-15% public, 10-40% core/employment, 50-80% residential, 5-10% open space
	Neighborhoods		1. neighborhood centers should contain a small cluster of shops, a small library, and a small park 2. 10% of housing should be affordable				1. neighborhoods separated by greenways, which do not have a town center should each contain a small cluster of shops, at least one of the following: a small library, school or other community building open to the public, and the appropriate number of pocket parks 2. 10% of housing should be affordable
Light Rail Station							
	Location of Station				Main Street	the center of a neighborhood Source: ULI	1. where the existing rail line intersects the strip or a town 2. Main Street should be adjacent to the station
	General Design Strategies					surround with active uses on all sides Source: ULI	surround with active uses on all sides

DESIGN STRATEGIES FOR SIX TYPES OF STATION AREAS

Each of the proposed station area fails into one of the following categories based on the condition that exists at the proposed light rail stop. First, at the stops that occur where the rail line intersects a strip, there are two conditions: Crossroads, where the strip and the rail meet at grade; and Bridges, where one of the two crosses above the other. Second, there are the conditions that occur at places, which include: Main Streets, where the rail line intersects a town; and Town Centers, where the rail line is adjacent to a town. Finally, there are Transit Oriented Developments (TOD), which are development opportunities where there is a large amount of undeveloped or underutilized land surrounding the rail line. The final condition is a Park & Ride, which should be limited to one along each light rail line. The following diagrams in Figures 34-60 illustrate the conditions of each station area and the proposed treatment of each station based on that condition and its program.

Crossroads



Design Strategy:

1. Create new Urban Villages to the northeast, southeast, northwest and southwest of the intersection of the rail line and the strip.

2. Buford Highway and Peachtree Industrial should be treated as neighborhood boundaries or edges. These roads should be redesigned as boulevards to move automobile traffic while accommodating pedestrians with continuous 6 foot wide sidewalks and 10 foot wide planting strips with street trees and pedestrian street lights to create a buffer between pedestrians and higher speed traffic.

3. The portion of the strip between Buford Highway and Peachtree Industrial should be redesigned as an avenue to reduce the speed of traffic as it passes through the transit village. This will allow both pedestrian and vehicular connections across the strip and will draw attention to retail along strip. The avenue should have one lane of traffic in each direction, parallel parking and 15 foot sidewalks on each side, and a median down the center.

4. Create one collective higher-density node along this new avenue, which acts as a seam between neighborhoods. The avenue should be lined with mixed use buildings with ground floor retail. Density should step down from this node. The light rail station should be located along the strip.

5. Provide 1 public square, plaza or green along the new avenue and 1 recreational field within the station area.

6. Additionally a pocket park should be located within 1/8 mile of every housing unit.

7. Reserve a prominent lot for an elementary school and at least one other lot for another civic building.

8. Internal streets within neighborhoods should be neighborhood streets and alleys, and block sizes should be approximately 200 feet x 300 feet.

Figure 34 Location of Station Areas with “Crossroads” Condition

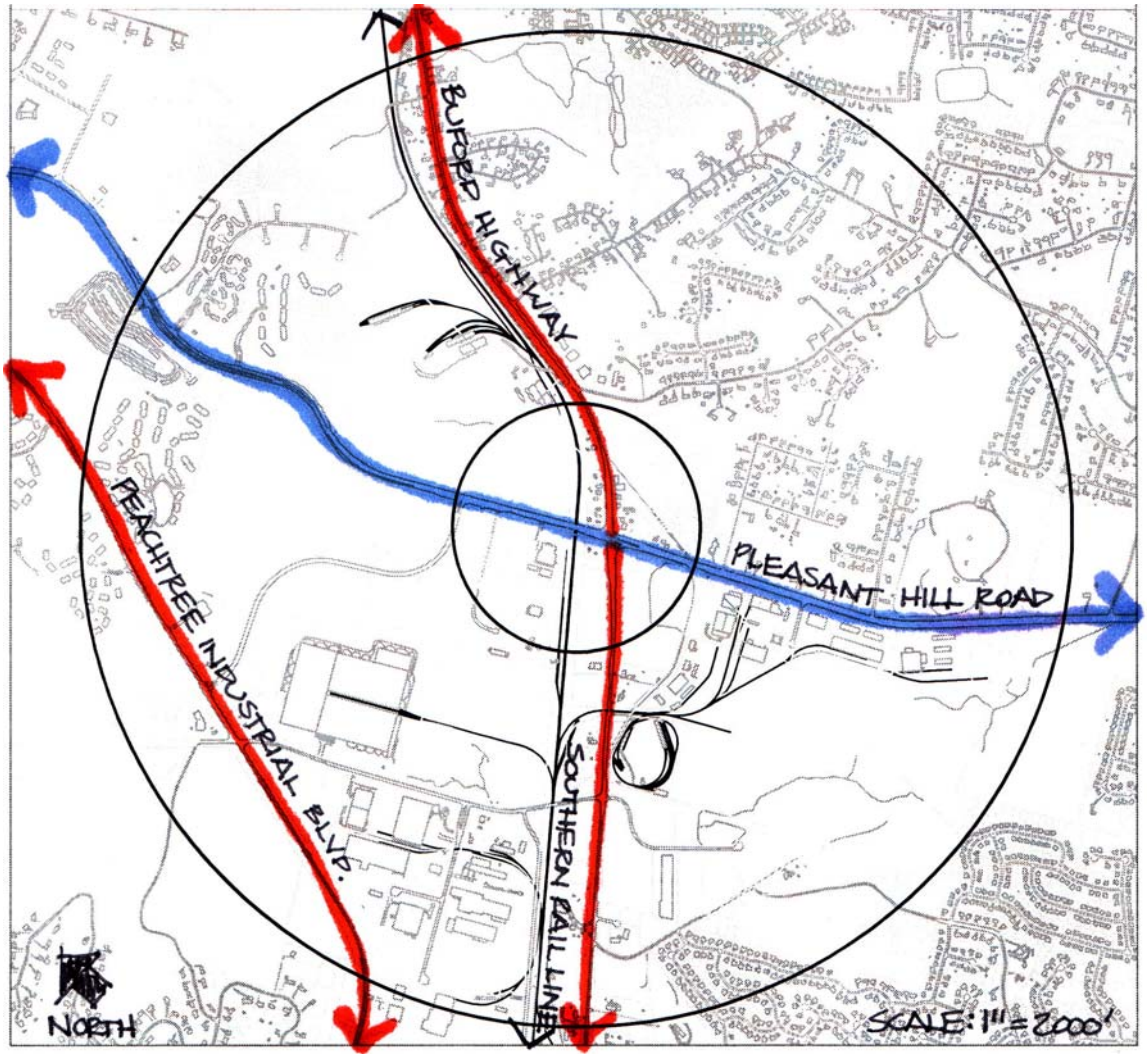


Figure 35 Pleasant Hill Station Area Condition

Figure 36 Pleasant Hill Station Area Program

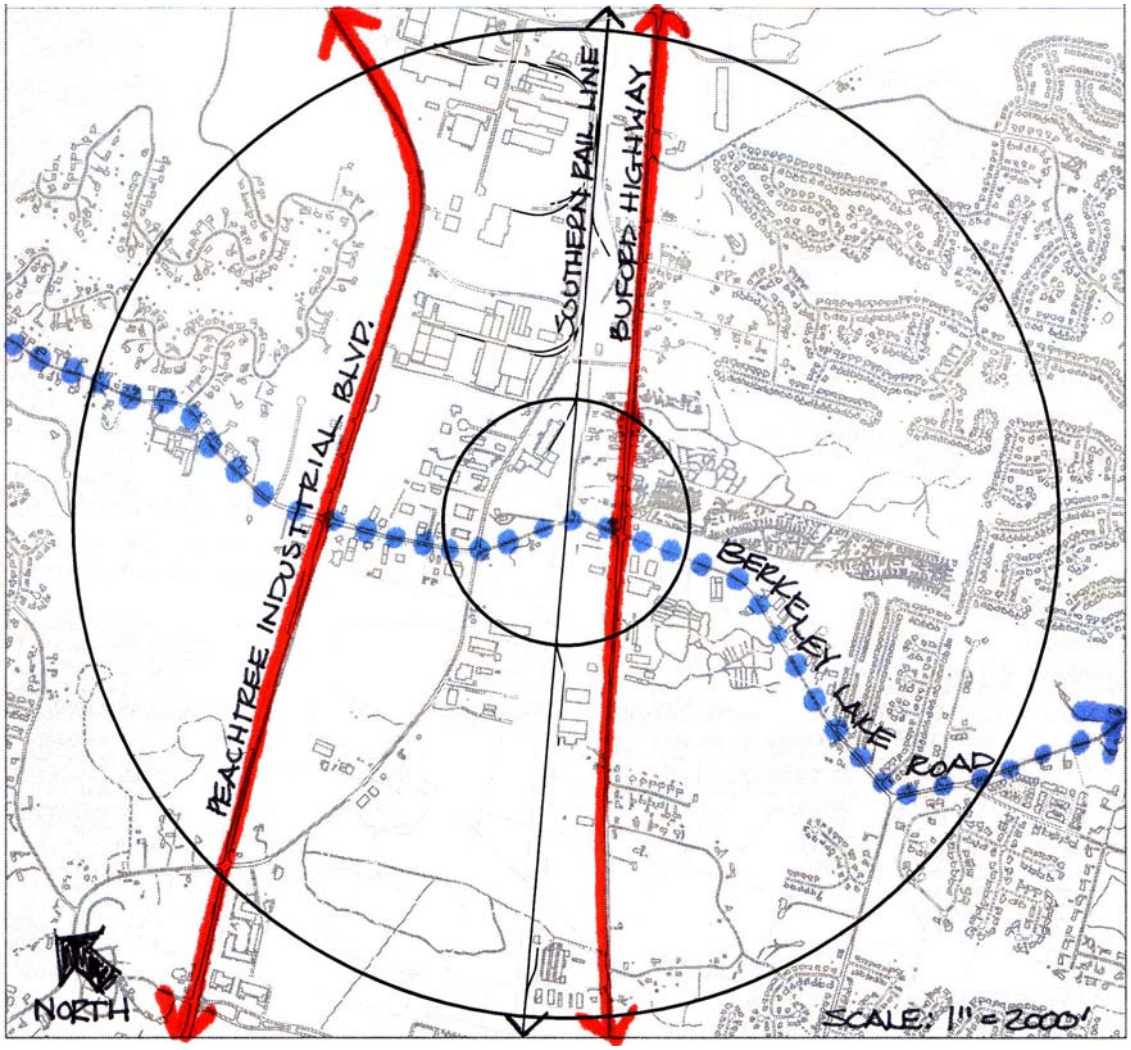


Figure 37 Berkely Lake Station Area Condition

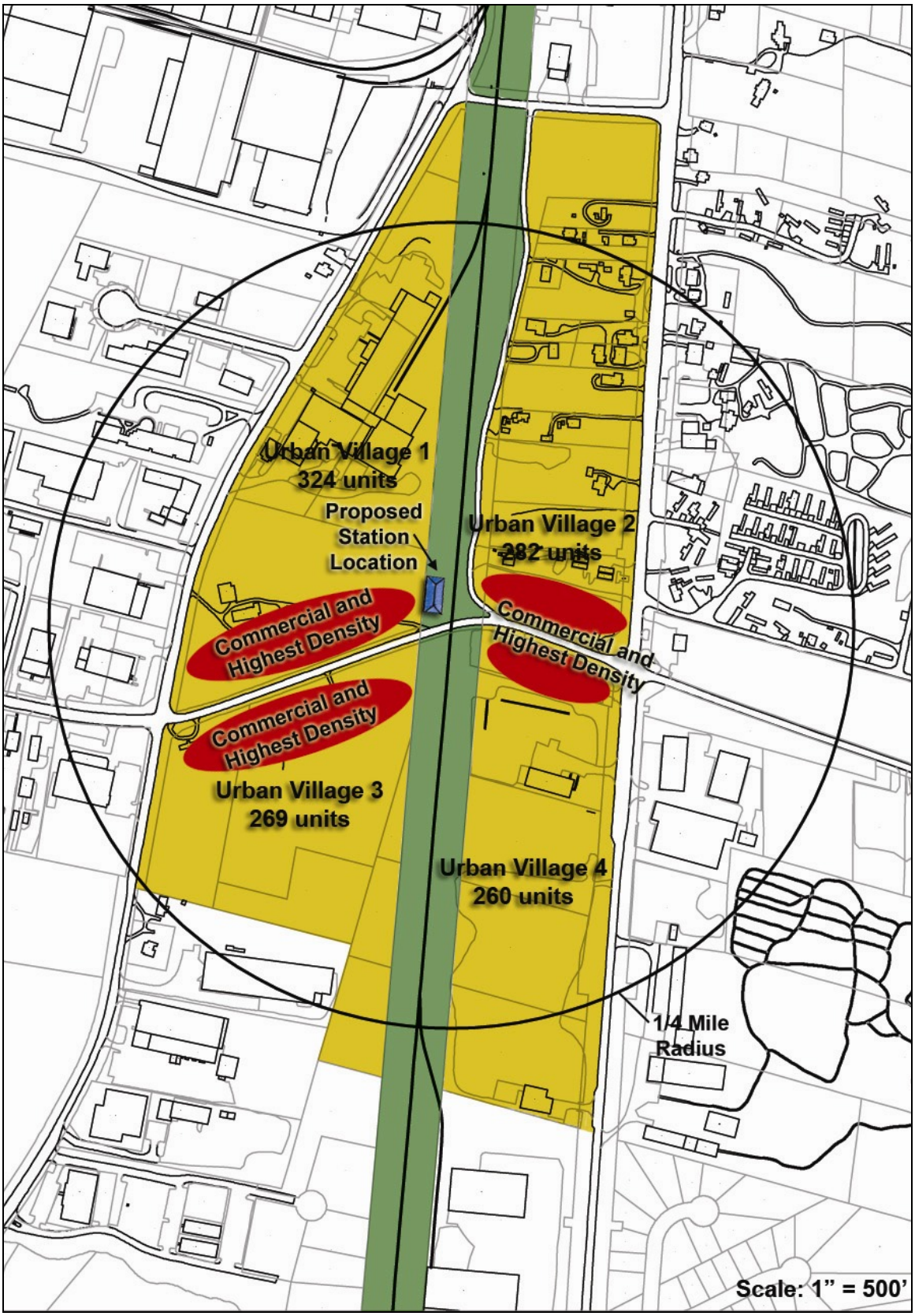
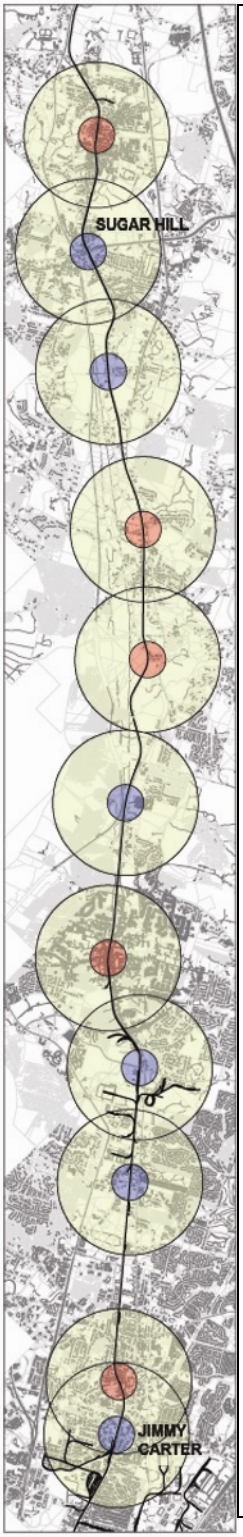


Figure 38 Berkely Lake Station Area Program

Bridges



Design Strategy:

1. Create 4 distinct Urban Villages separated by a greenway to the northeast, southeast, northwest and southwest of the intersection of the rail line and the strip.

2. Buford Highway and Peachtree Industrial should be treated as neighborhood boundaries or edges. These roads should be redesigned as boulevards to move automobile traffic while accommodating pedestrians with continuous 6 foot wide sidewalks and 10 foot wide planting strips with street trees and pedestrian street lights to create a buffer between pedestrians and higher speed traffic.

3. The bridge condition takes on 2 different forms at these 2 station areas. At Sugar Hill, the strip is elevated over the rail line, which is at grade; therefore, the Urban Villages can be connected to one another via pedestrian paths and main streets through the greenway beneath the strip. At Jimmy Carter, the rail line bridges over the strip, so the strip should be treated as an avenue to allow pedestrian and vehicular crossing of the strip.

4. Each Urban Village should have its own small cluster of shops in place of one centralized town center. These neighborhood commercial nodes should be connected to one another by main streets.

5. Each Urban Village should have at least one school, library, or other civic building or civic use within a building.

6. Provide 1 public square, plaza or green and 1 recreational field within the station area.

7. Additionally a pocket park should be located within 1/8 mile of every housing unit.

8. Internal streets within neighborhoods should be neighborhood streets and alleys, and block sizes should be approximately 200 feet x 300 feet.

Figure 39 Location of Station Areas with “Bridge” Condition

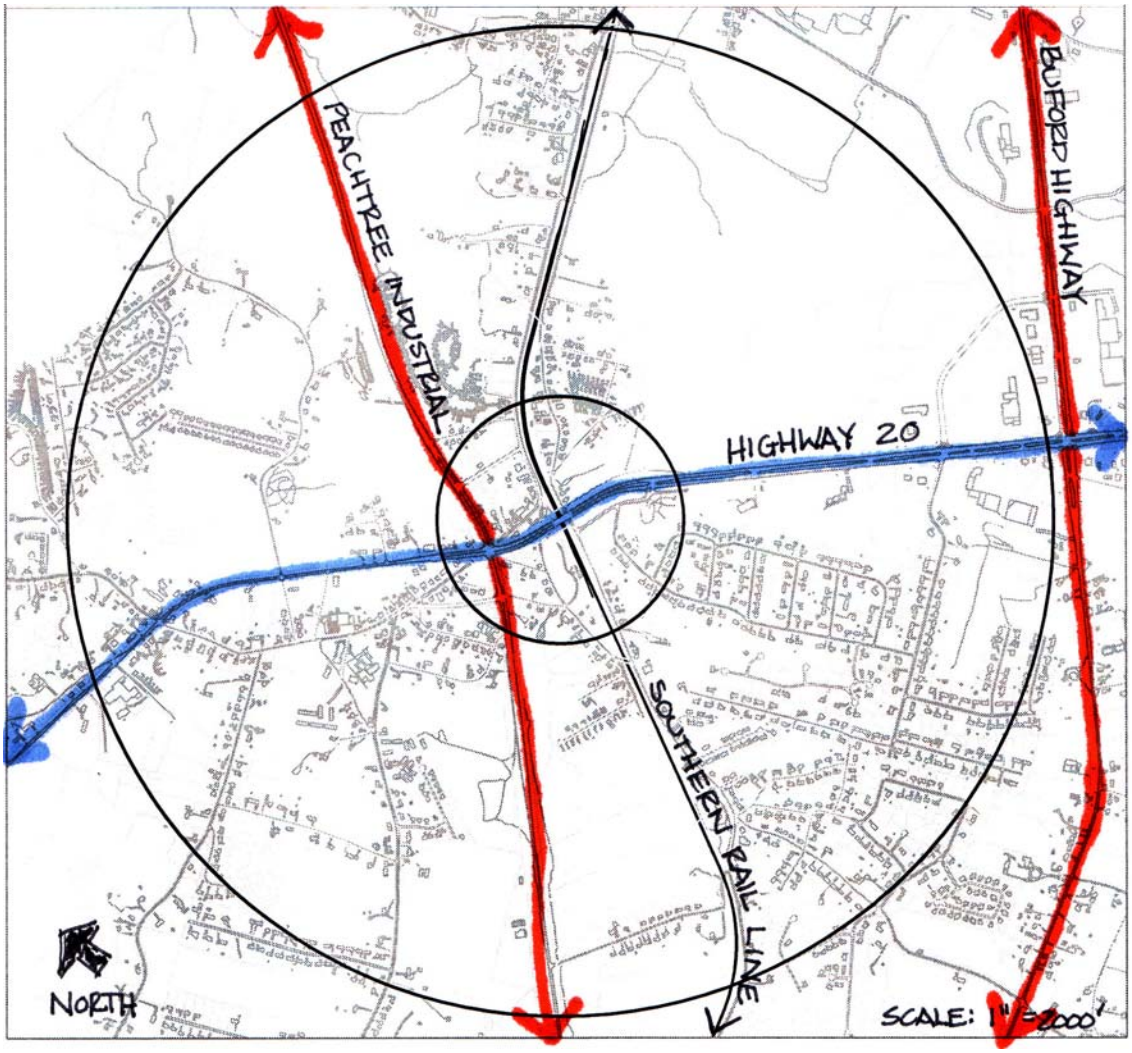


Figure 40 Sugar Hill Station Area Condition

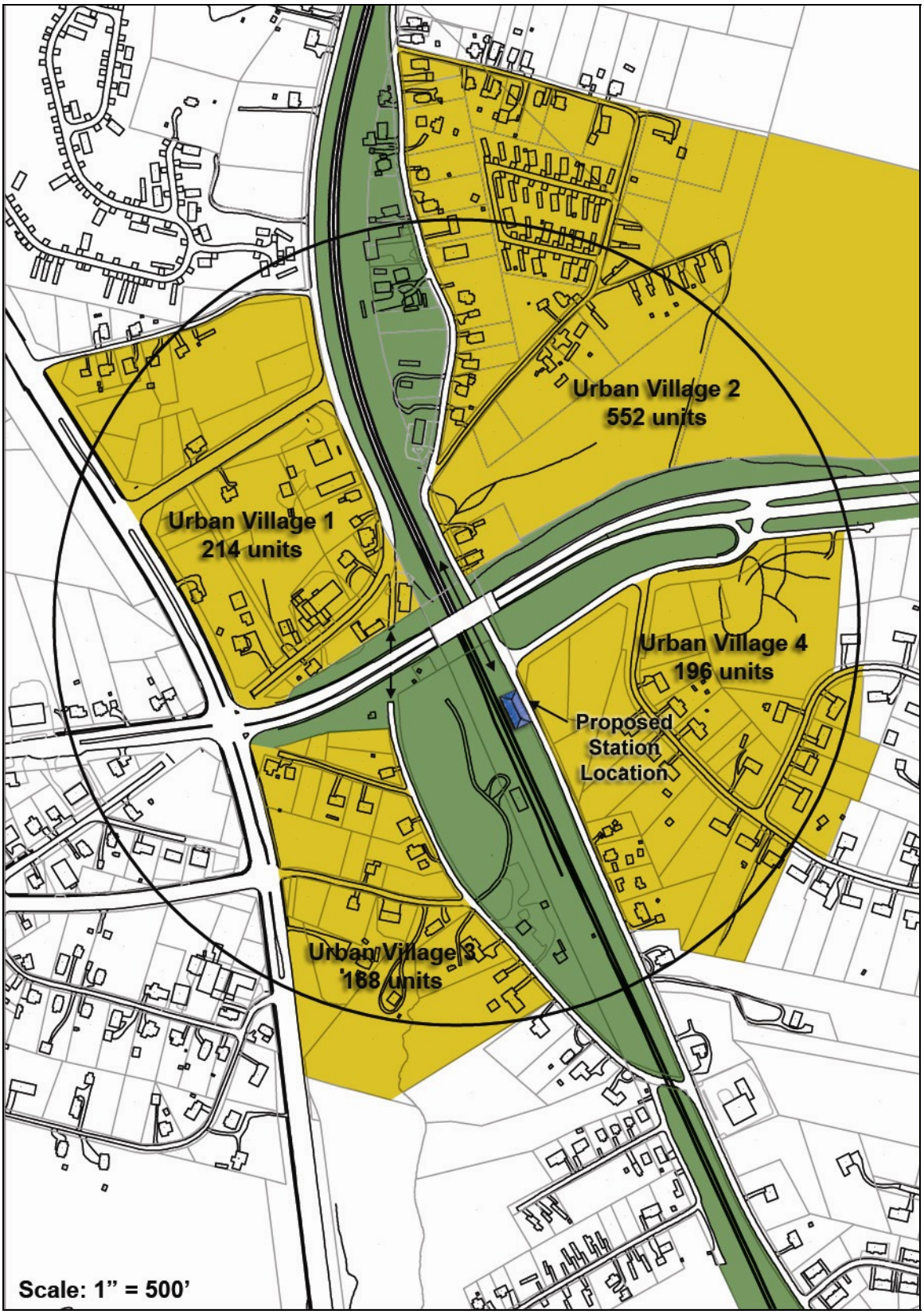


Figure 41 Sugar Hill Station Area Program

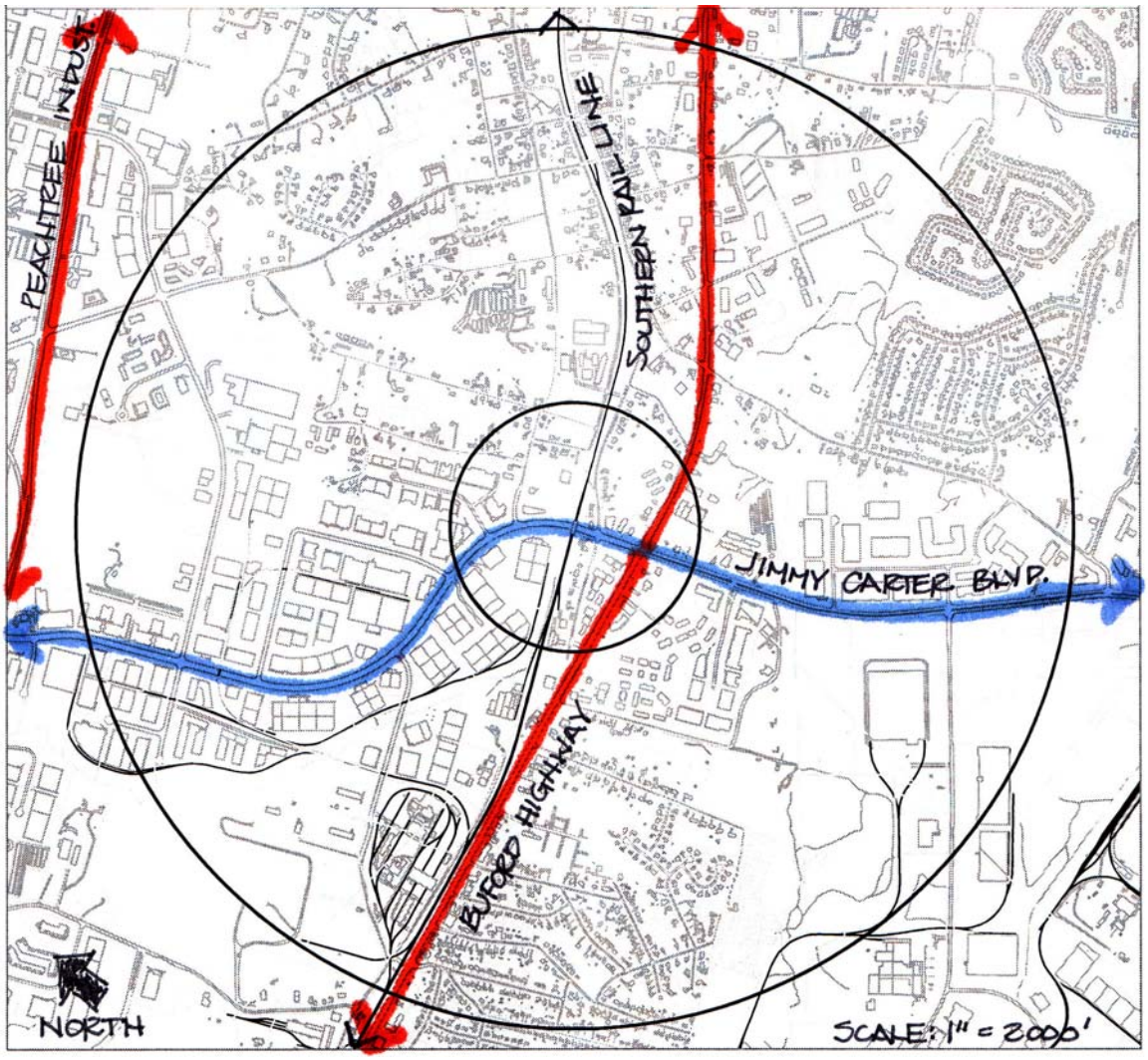


Figure 42 Jimmy Carter Station Area Condition

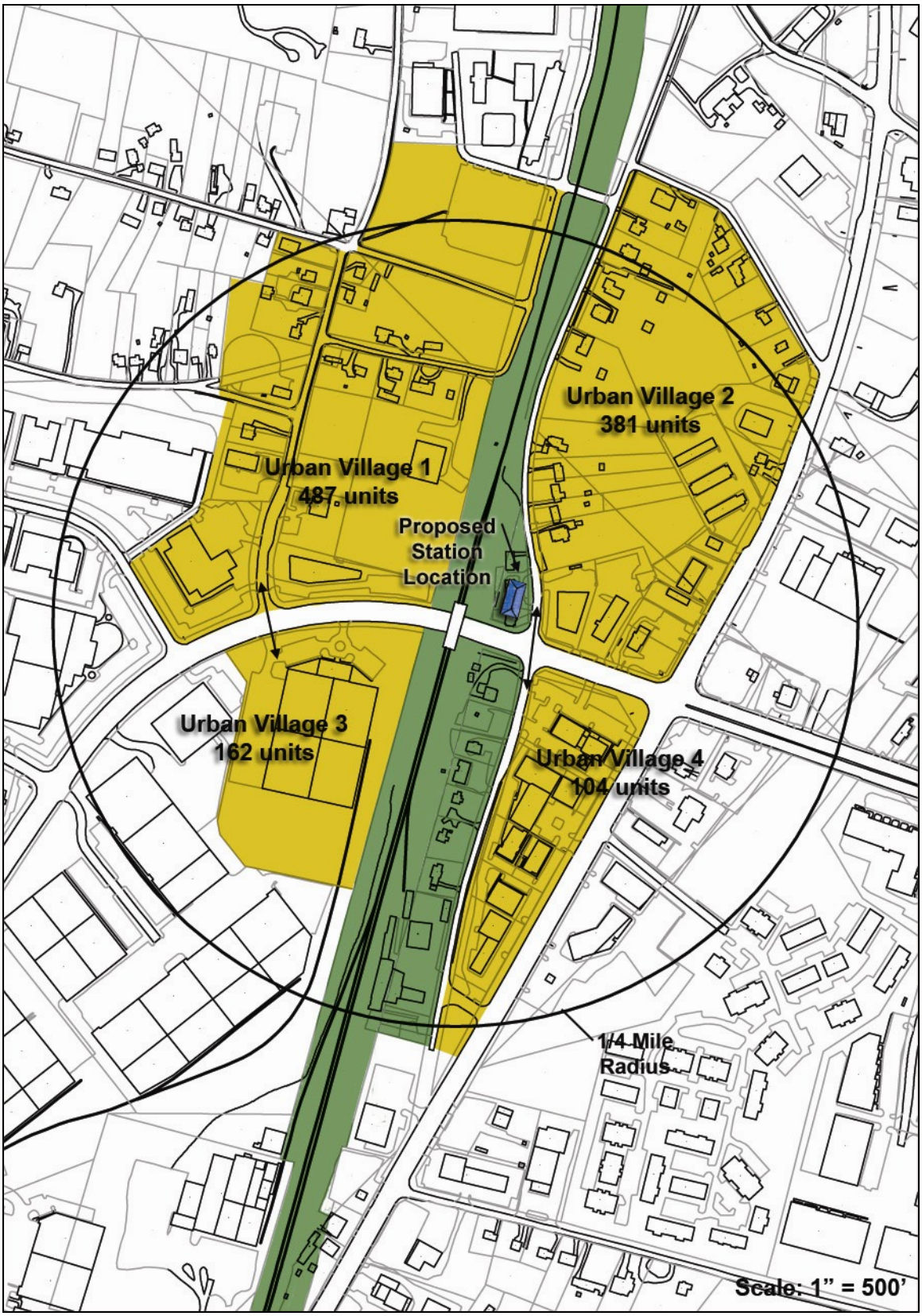
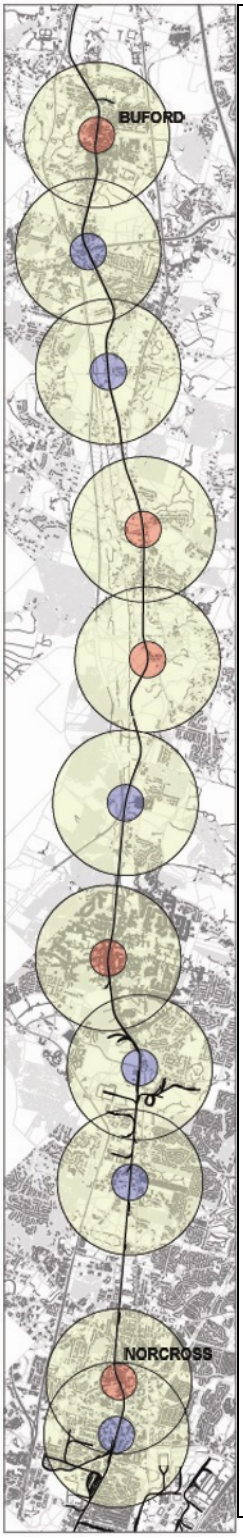


Figure 43 Jimmy Carter Station Area Program

Main Streets



Design Strategy:

These existing railroad towns already have an existing sense of place with some civic and retail uses as well as residential, however these station areas have insufficient density to support light rail transit or the addition of retail and services to serve everyday needs beyond entertainment. By increasing density within the existing framework, these places could develop into livable towns instead of historic destinations.

1. Build a new mixed use transit depot on Main Street.
2. Preserve existing historic buildings and character.
3. Renovate upper stories of existing storefront buildings along Main Street for residential or office use.
4. Allow carriage house rental units with tandem lot zoning to increase density on existing single family lots while preserving historic residential character.
5. Redevelop low-density parcels with medium density residential.
6. Infill vacant lots with single family or medium density residential throughout the rest of the station area.

Figure 44 Location of Station Areas with “Main Street” Condition

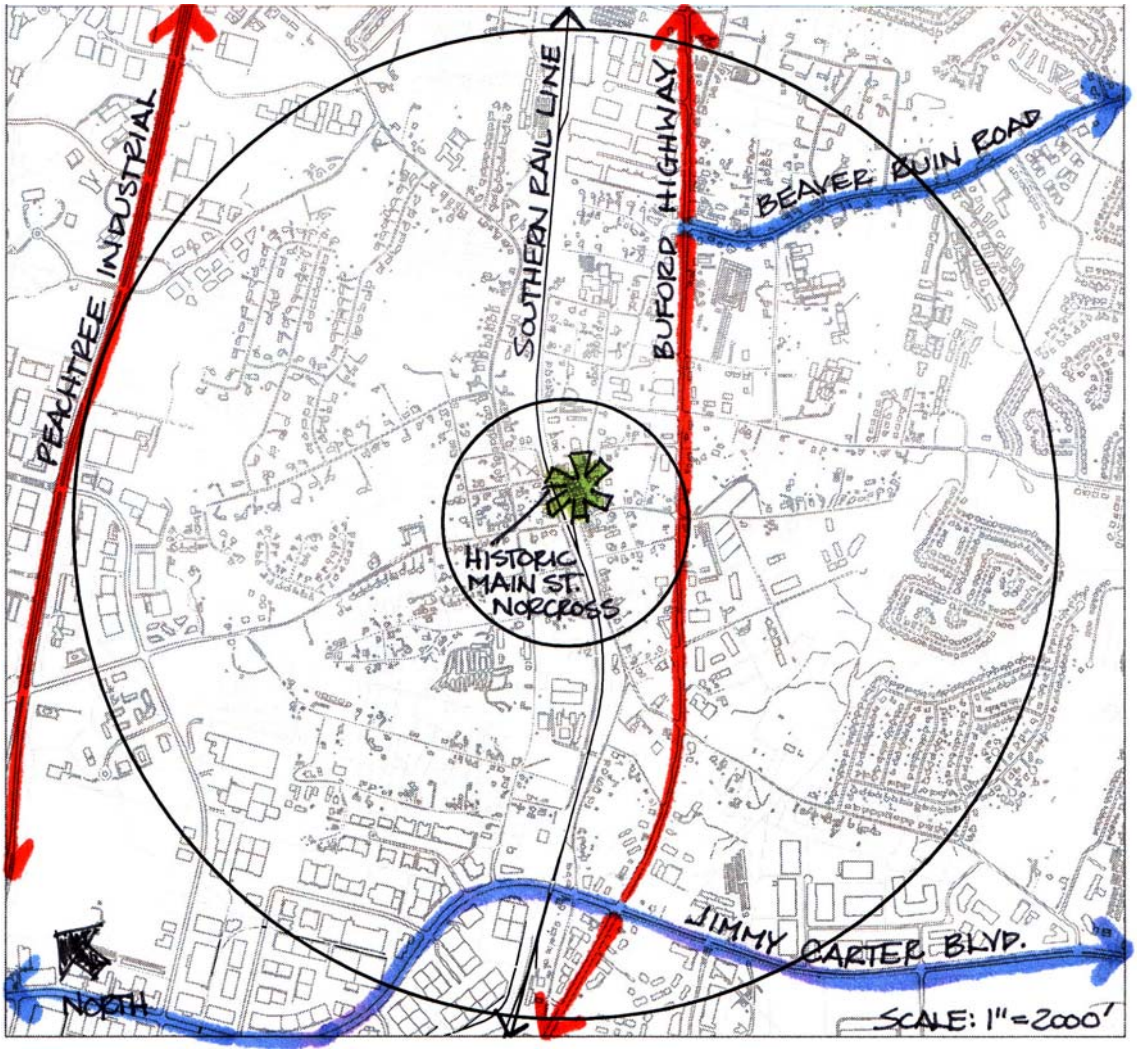


Figure 45 Norcross Station Area Condition

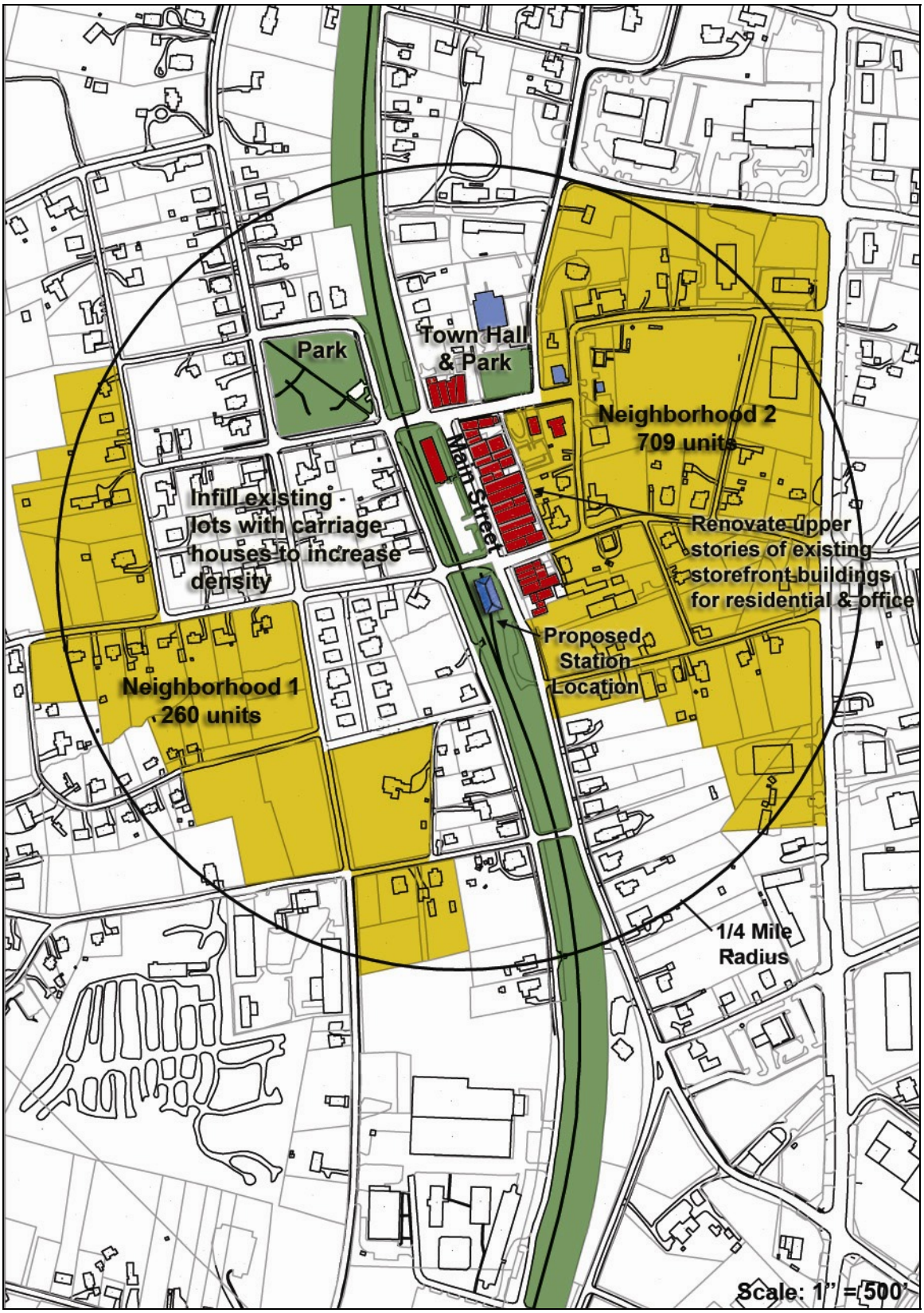


Figure 46 Norcross Station Area Program

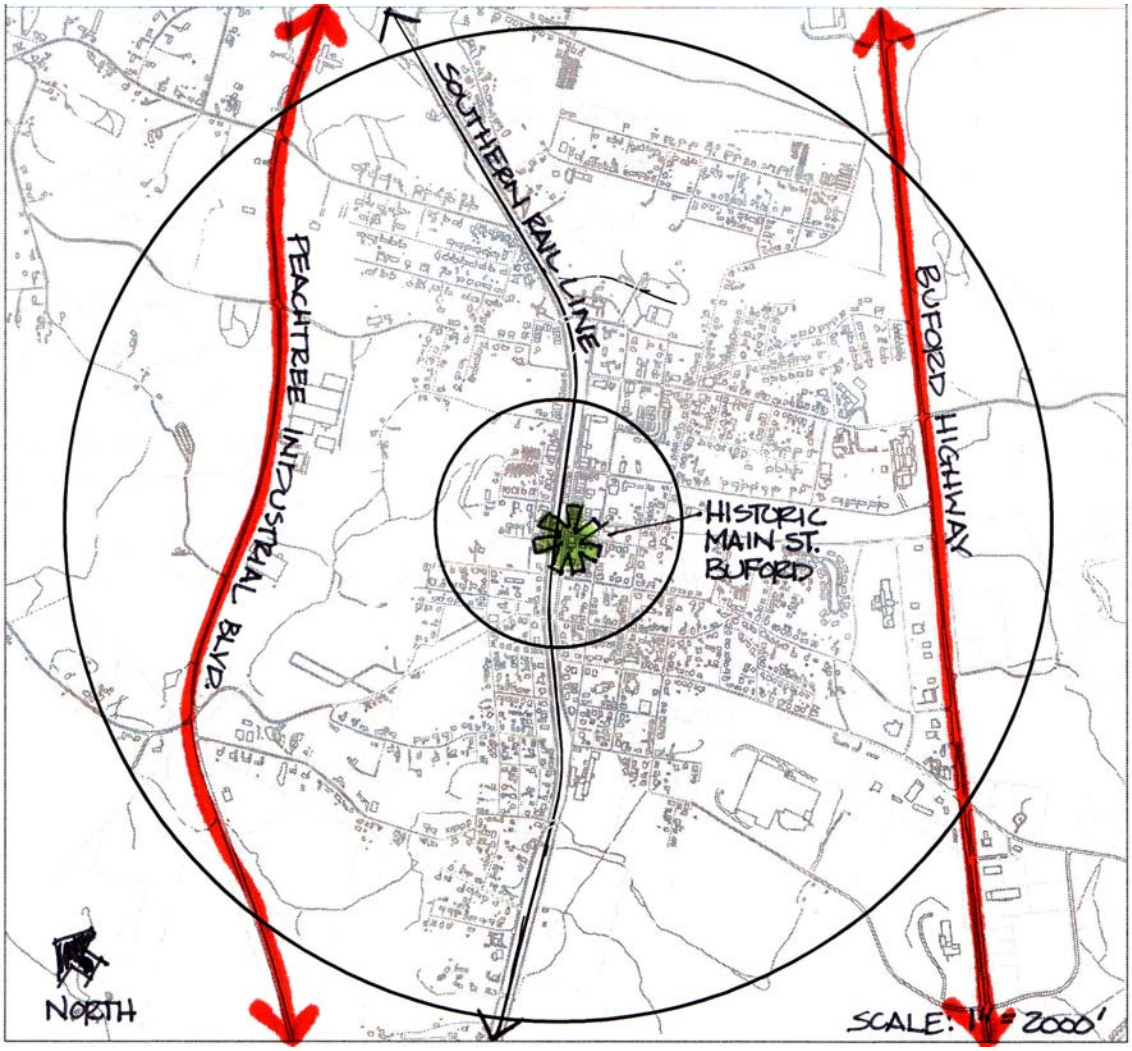


Figure 47 Buford Station Area Condition

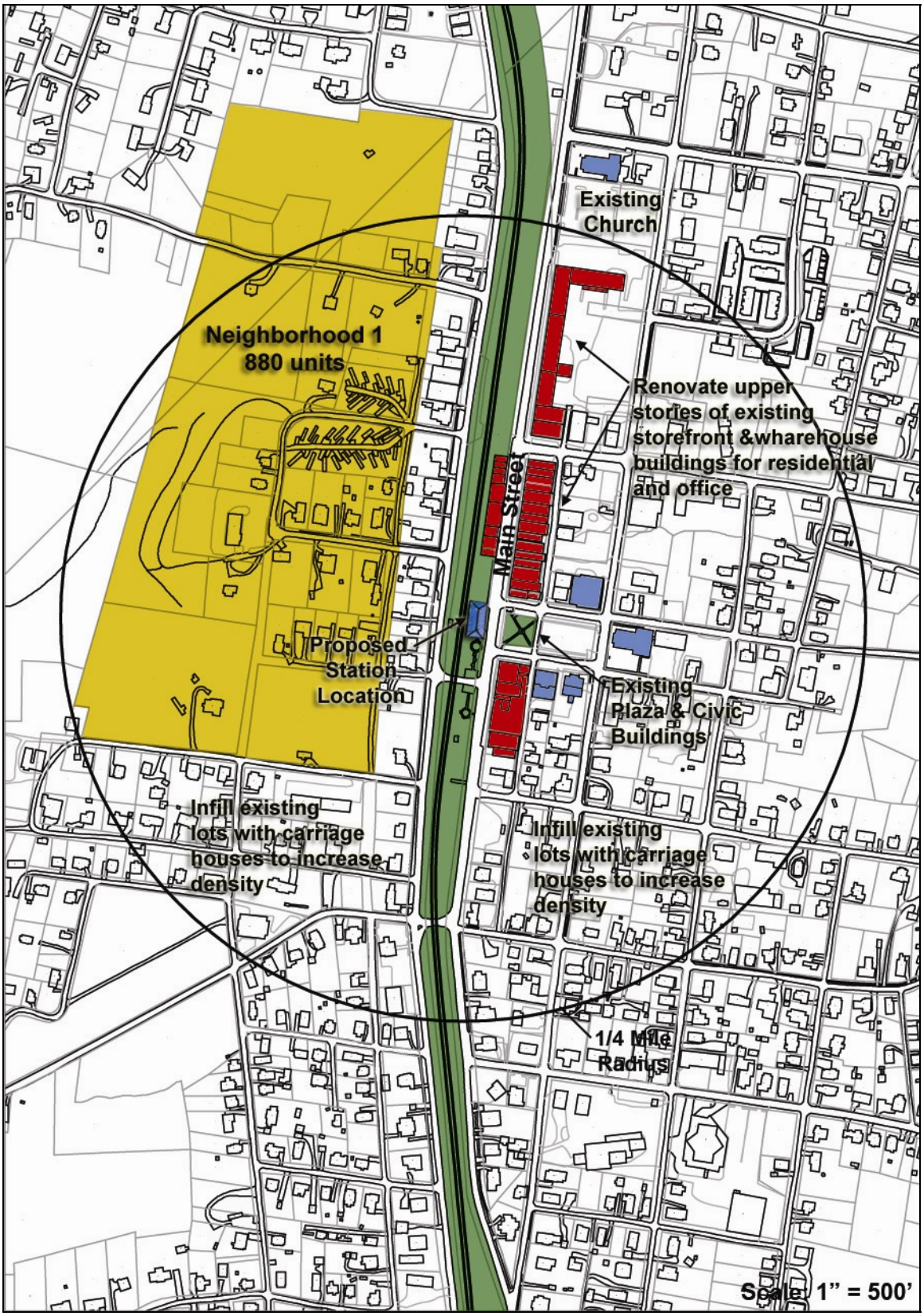
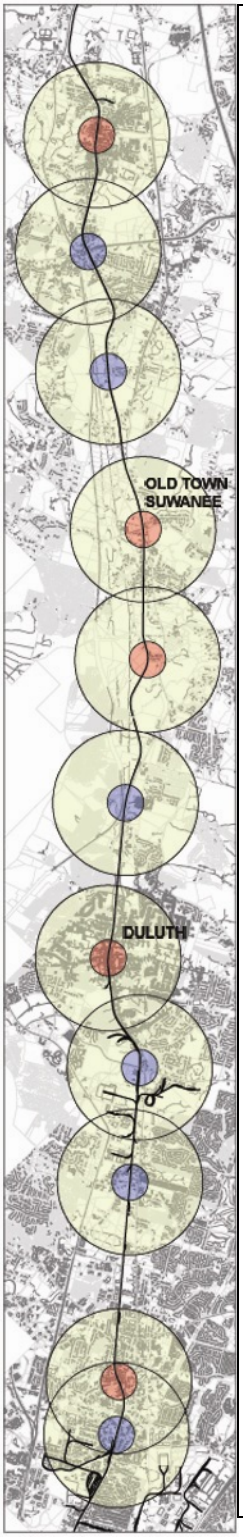


Figure 48 Buford Station Area Program

Town Centers



Design Strategy:

These 2 railroad towns have each created a town center consisting of a formal town green surrounded by buildings at the intersection of a strip and Buford Highway. These town greens are a new permanent part of the framework in addition to the main street of the former railroad town. The town greens have created a sense of place and identity for these towns, which already have civic buildings and some retail and residential uses surrounding the green. However these station areas have insufficient density to support light rail transit or the addition of retail and services to serve everyday needs beyond entertainment. By increasing density within the existing framework, these places could develop into livable towns.

1. The design strategy for these two station areas should be contextual, responding to the unique existing conditions of these two towns.

2. Build a new mixed use transit depot in a location that reinforces the civic space of the town green.

3. Increase the density of the station area by creating new mid-density neighborhoods on undeveloped or underutilized land surrounding the town green.

4. Increase connectivity by creating a pedestrian crossing across existing railroad tracks at the location of the transit depot.

5. The portion of Buford Highway and the strips within the quarter-mile radius should be redesigned as avenues or main streets to reduce the speed of traffic as it passes through the station area to allow pedestrians to cross between the four corners.

6. Locate any new commercial development along these new main streets and avenues adjacent to the town green to reinforce the town green as the center of the station area.

Figure 49 Location of Station Areas with “Town Center” Condition

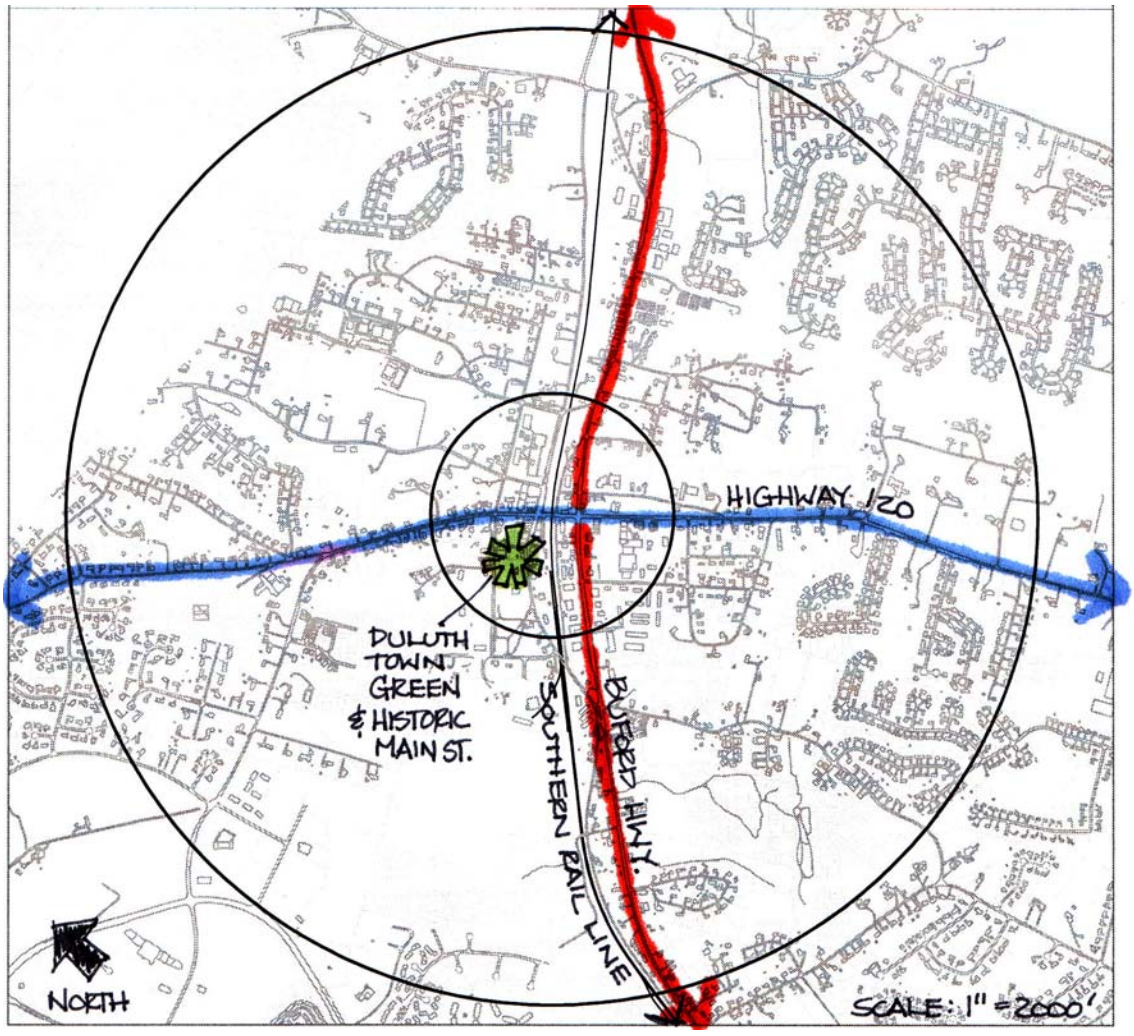


Figure 50 Duluth Station Area Condition

Figure 51 Duluth Station Area Program

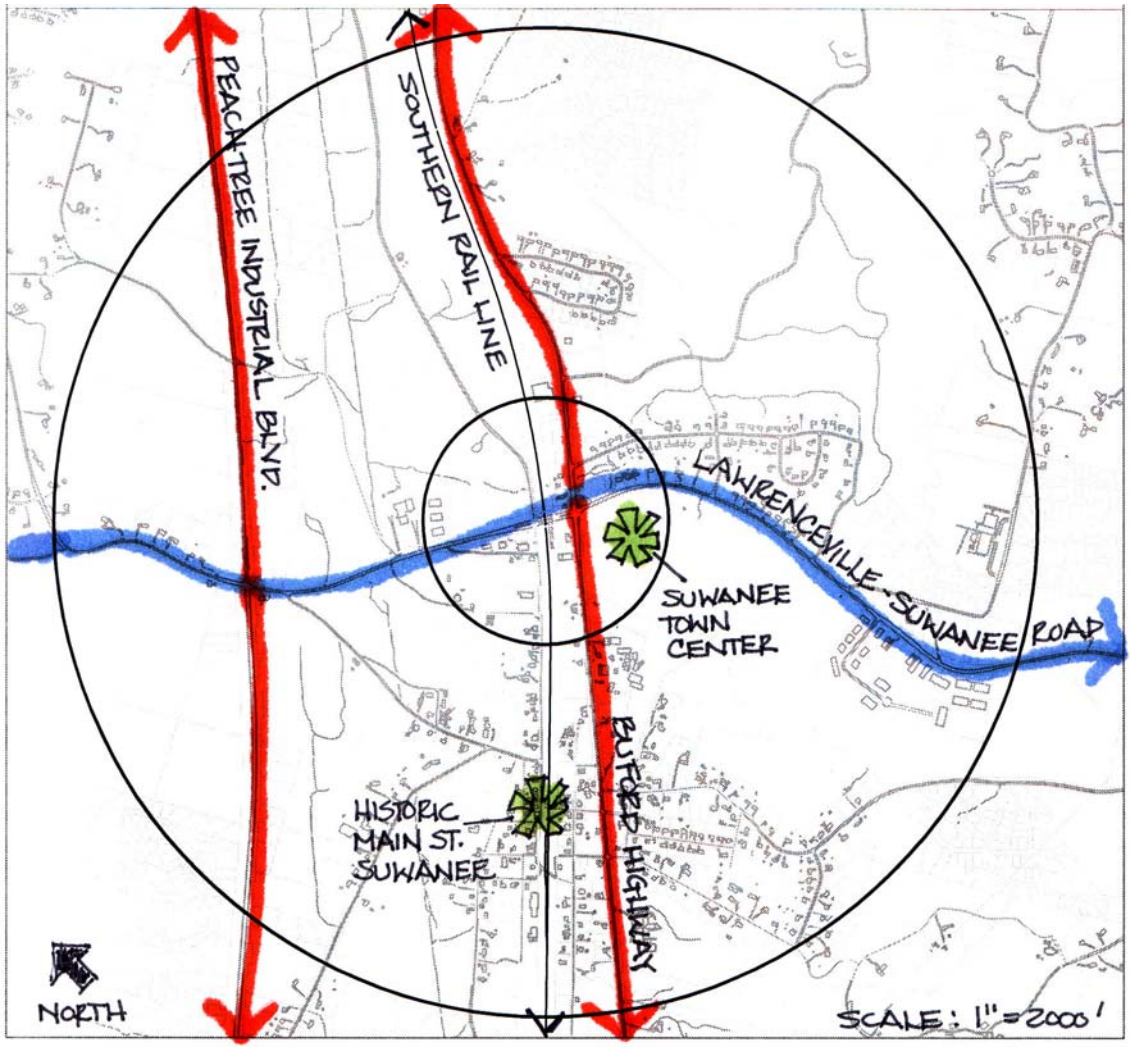


Figure 52 Old Town Suwanee Station Area Condition

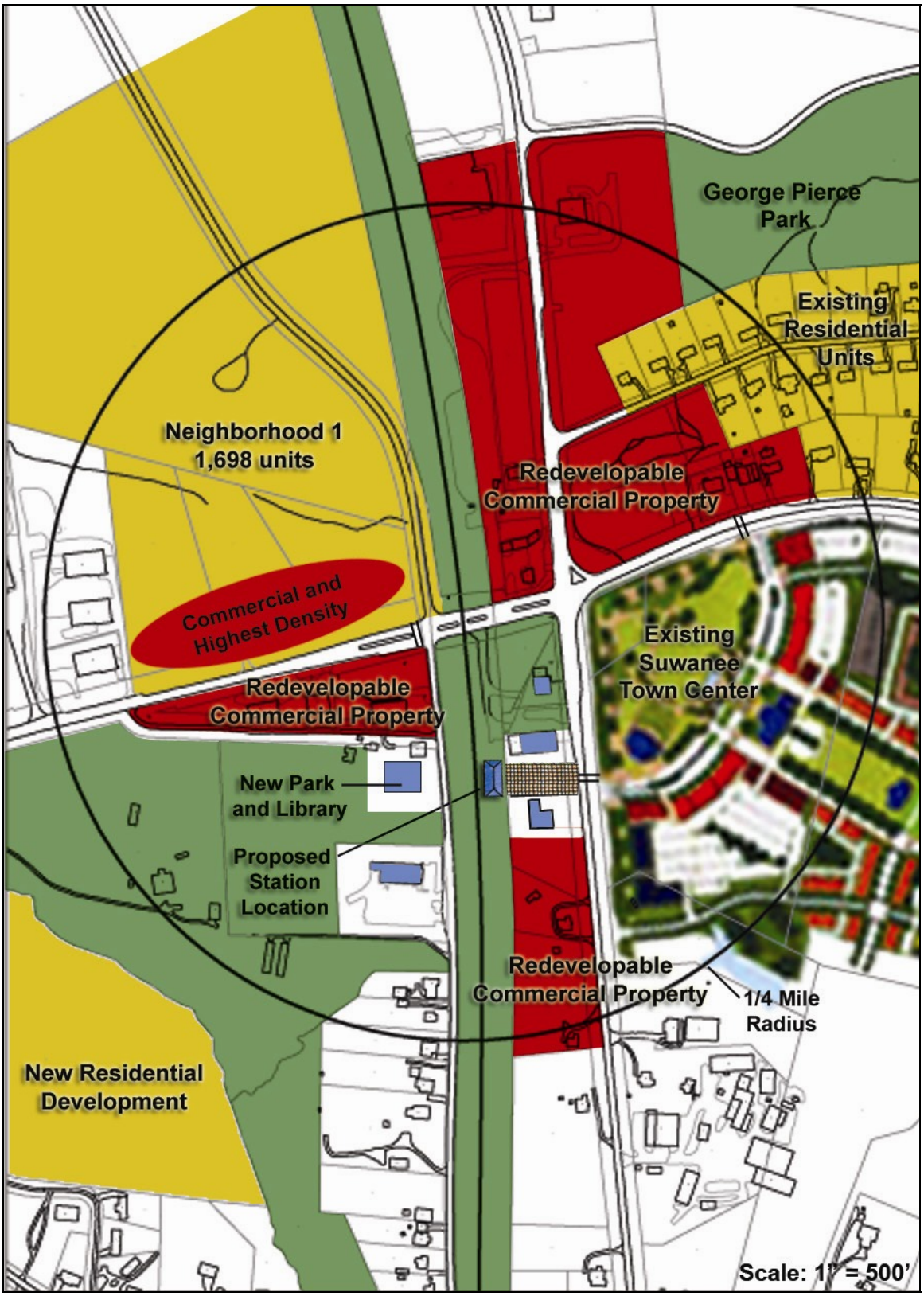
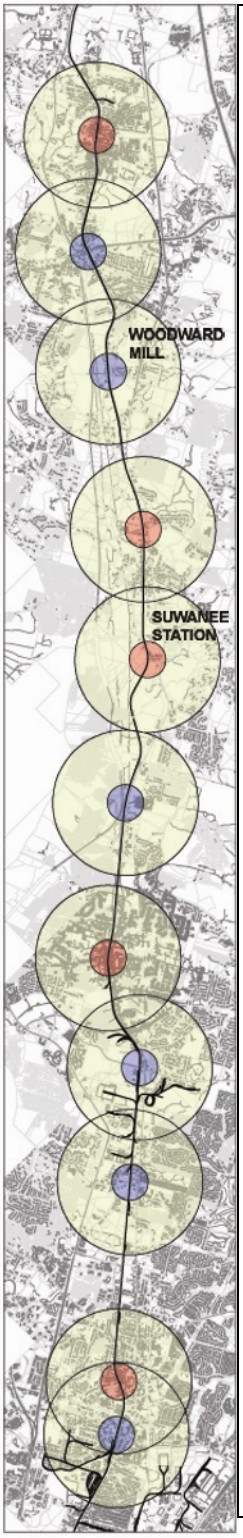


Figure 53 Old Town Suwanee Station Area Program

Transit Oriented Developments



Design Strategy:

1. Create a high-density, mixed use core at the center of the station area.
2. Surround the core with housing units. Density should gradually step down from the core to the edge.
3. The transit stop should be located along the main street of the core surrounded by active uses.
4. Provide 1 public square, plaza or green within the core and 1 recreational field within the station area.
5. Additionally a pocket park should be located within 1/8 mile of every housing unit.
6. Reserve a prominent lot for an elementary school and at least one other lot for another civic building.
7. Block sizes should be approximately 200 feet x 300 feet with an intersection at least every 300 feet.

Figure 54 Location of Station Areas with “TOD” Condition

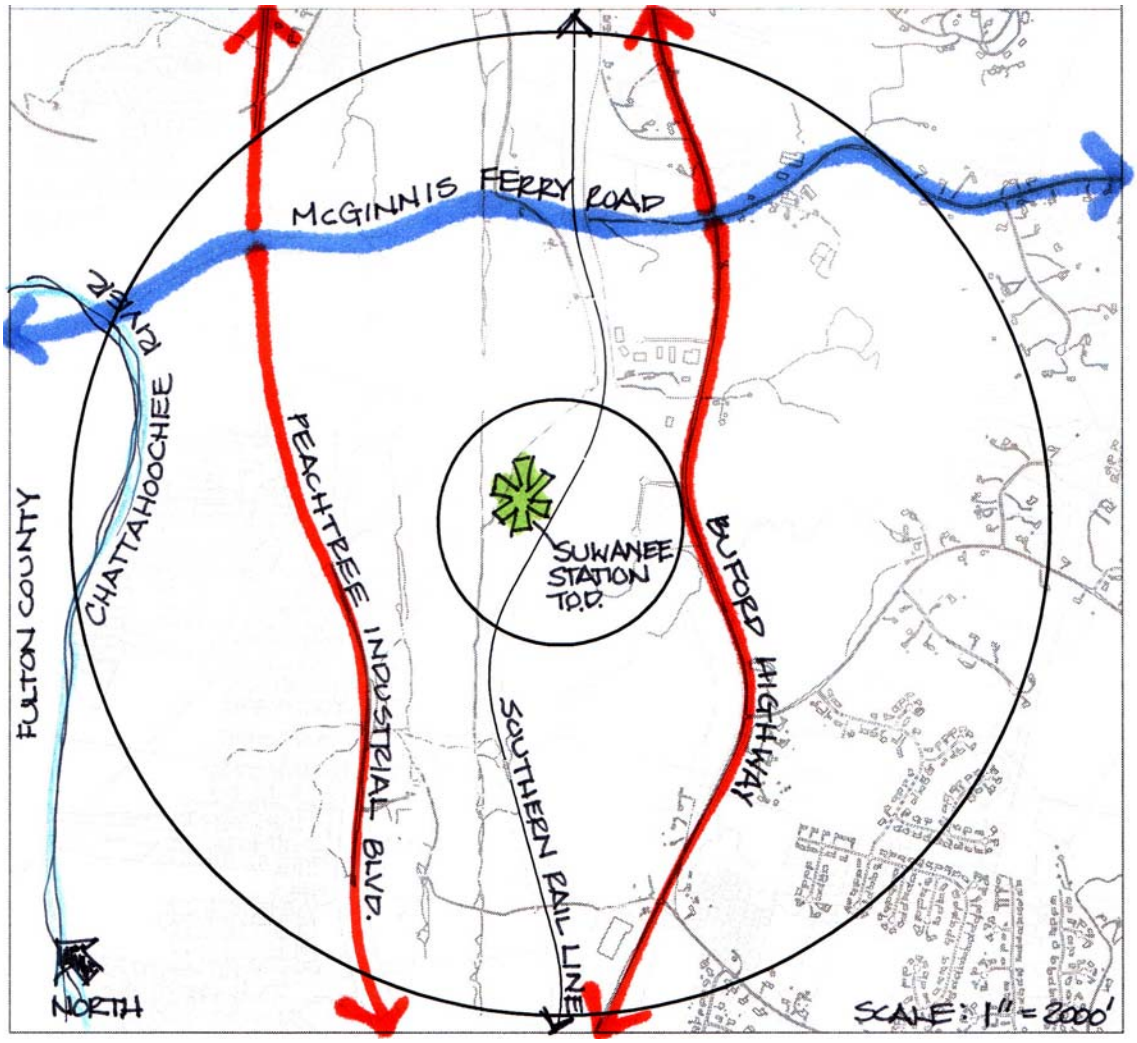


Figure 55 Suwanee Station Station Area Condition

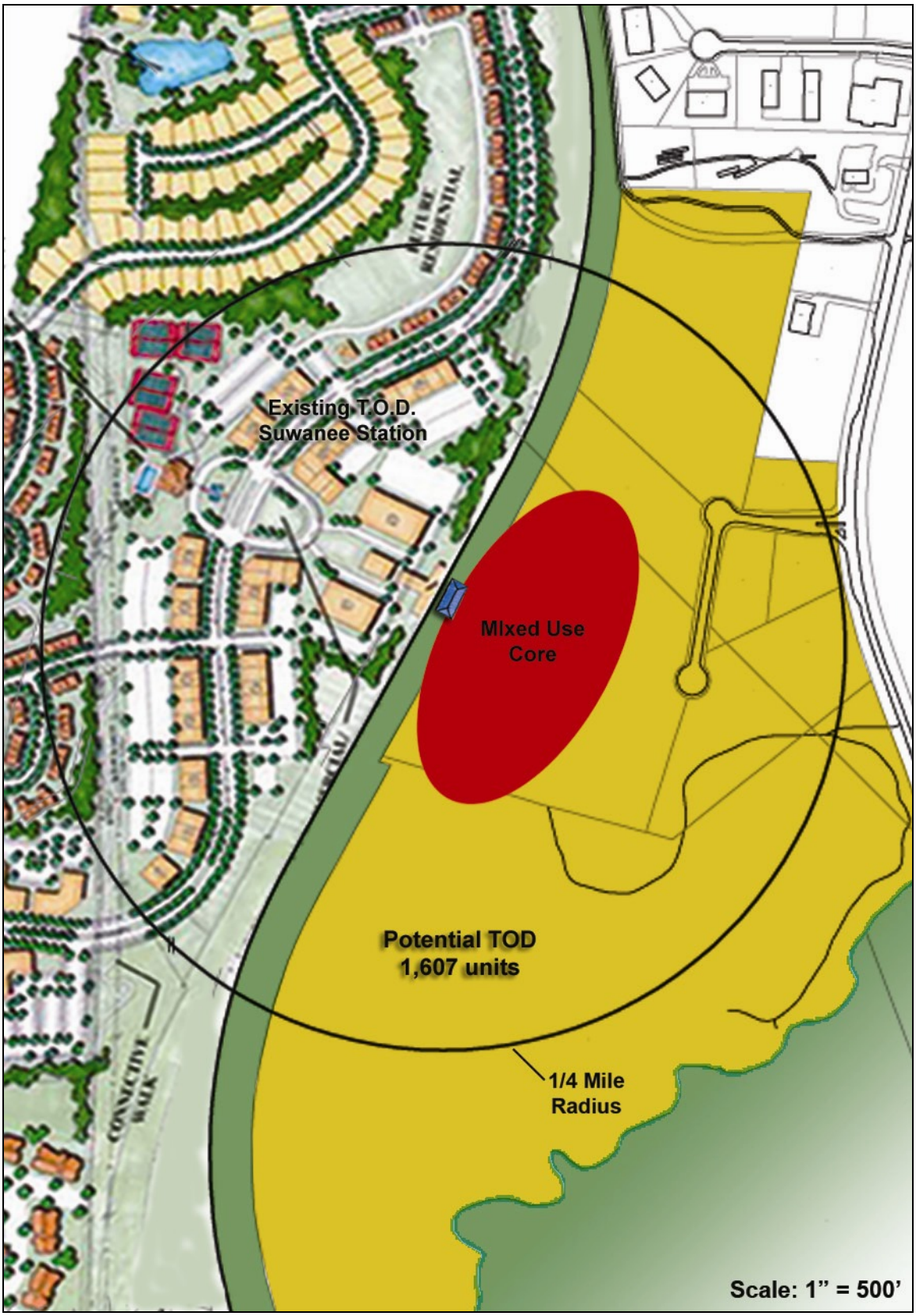


Figure 56 Suwanee Station Station Area Program

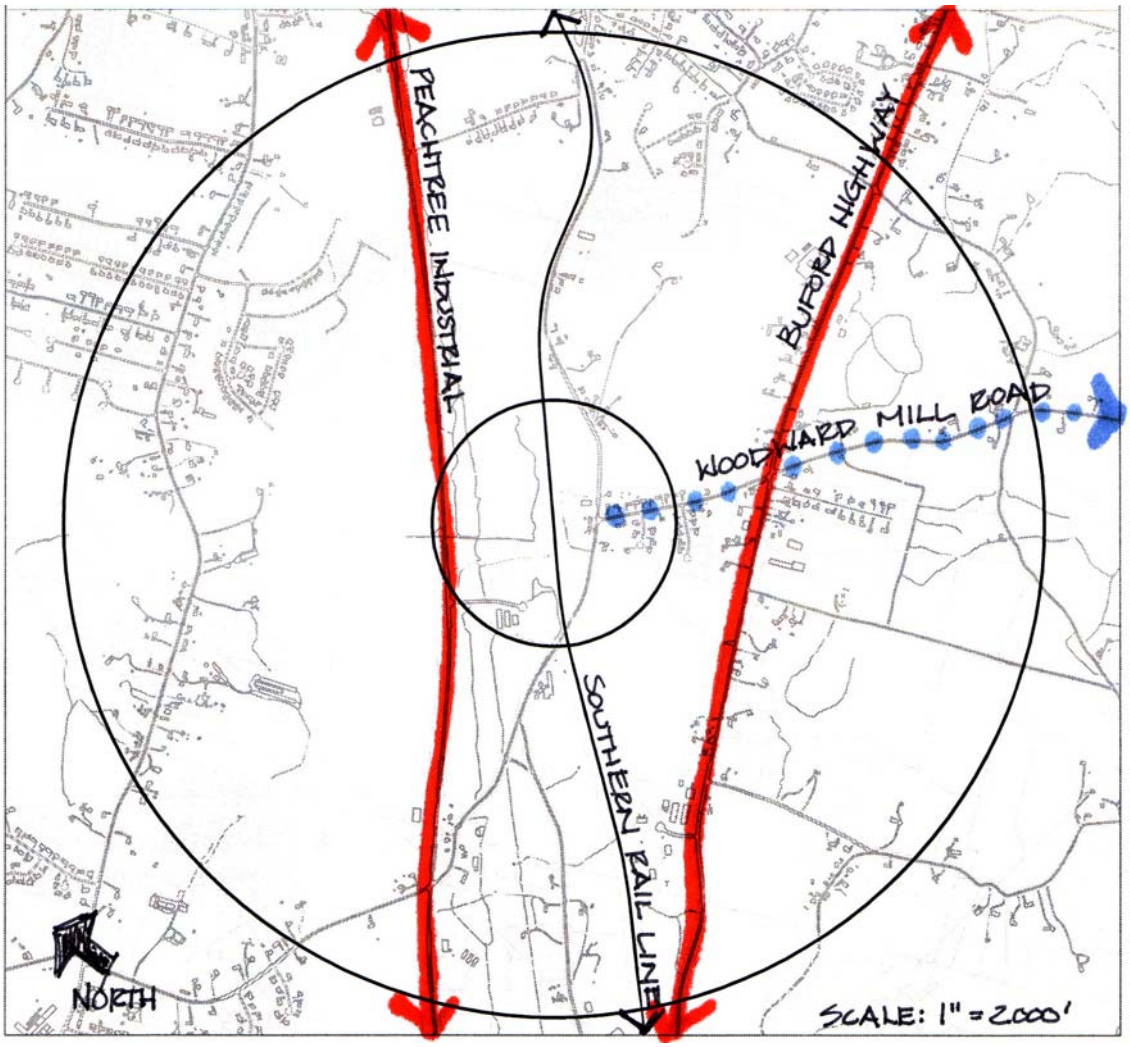


Figure 57 Woodward Mill Station Area Condition

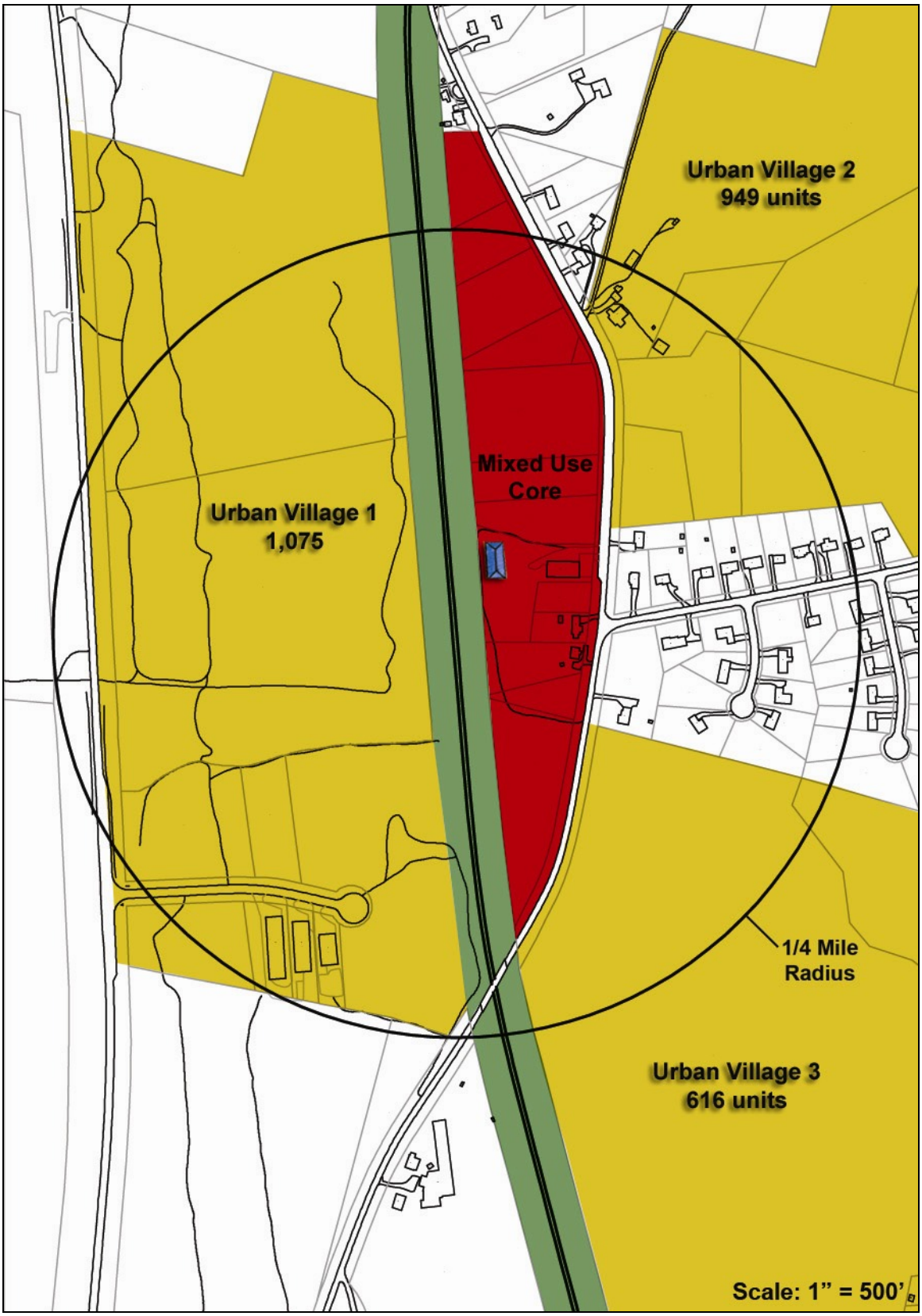
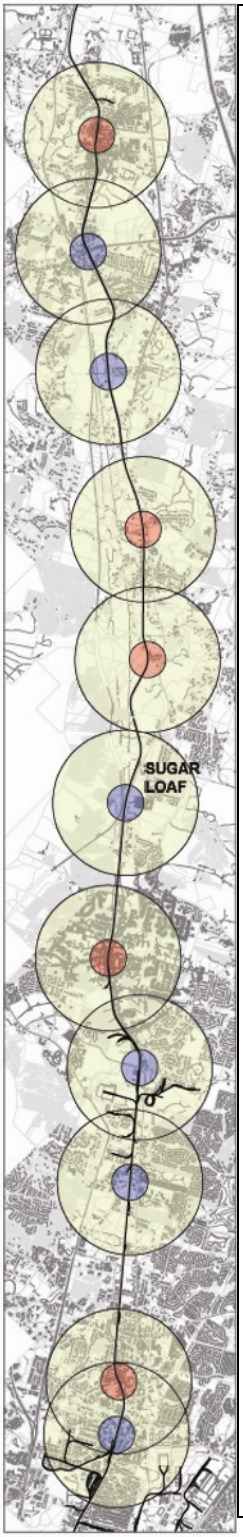


Figure 58 Woodward Mill Station Area Program

Park & Ride



Design Strategy:

The Sugar Loaf station area does not have a significant amount of land available for development because Buford Highway and Peachtree Industrial Boulevard come very close together at this point. However, this condition creates a logical opportunity for a park and ride station that will serve the following functions and strengthen the idea of a commuter line as a redevelopment strategy for the county.

1. A park and ride deck will increase ridership and help fund the transit line. The strategic location at the intersection of a major east-west strip with two major north-south highways will serve a large number of Gwinnett residents as well as northern Fulton County residents.

2. A deck at this location could also serve the parking needs of Gwinnett Civic Center events, which currently require Gwinnett Center to be surrounded by fields of parking and often cause traffic congestion. Shuttle buses could run along Sugar Loaf Parkway between the station and Gwinnett Center during events to transport those that park at the station or arrive by rail. A reduction in on-site peak parking at would allow infill residential, office and retail development to create a greater sense of place at Gwinnett Center.

3. This station area would provide a location for necessary operations and maintenance facilities associated with light rail including a control room and storage yard for off-duty rail cars.

Figure 59 Location of “Park and Ride” Station

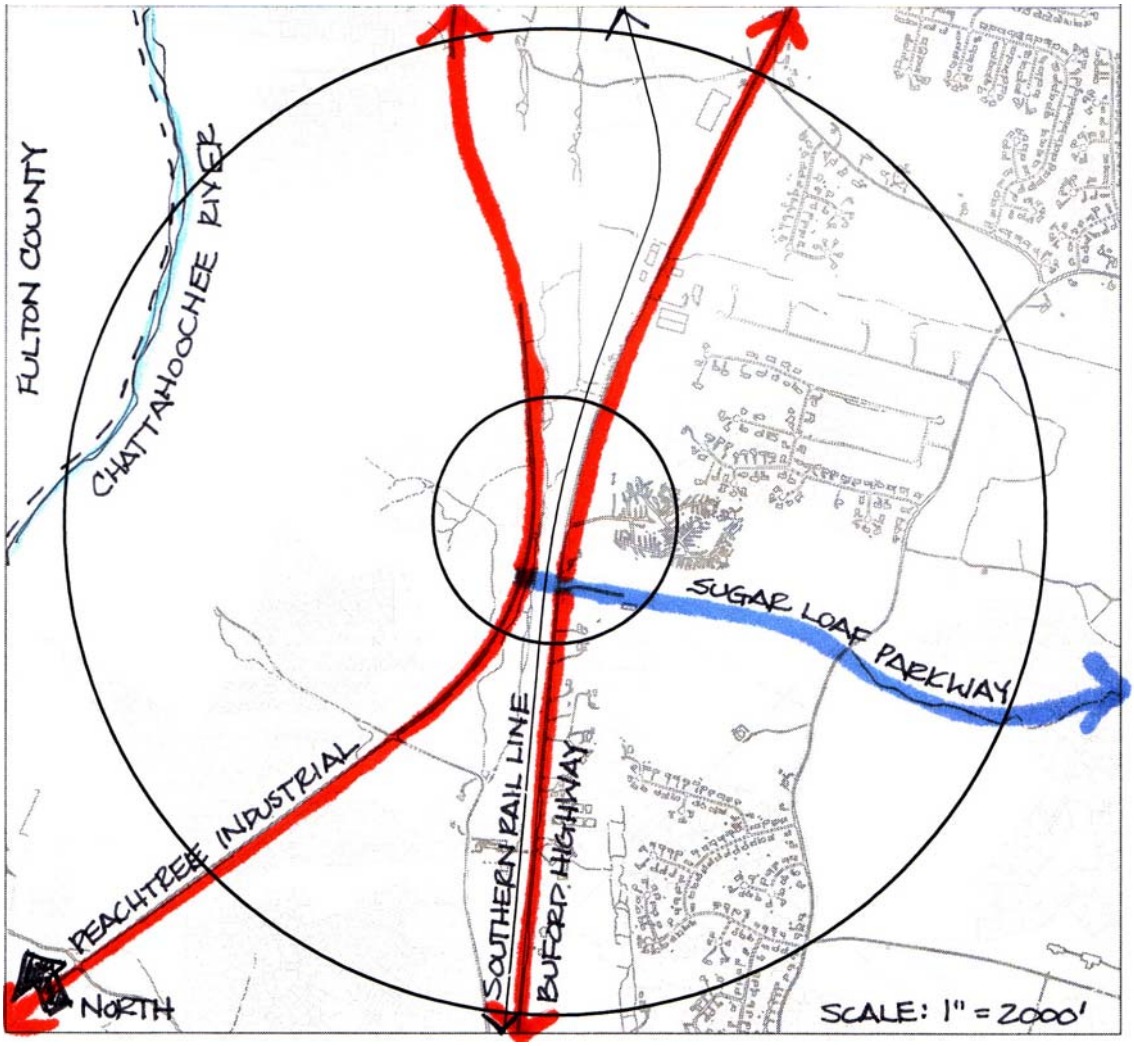


Figure 60 Sugar Loaf Station Area Condition

ILLUSTRATIVE EXAMPLE

The Jimmy Carter station area was selected to illustrate the design guidelines for one of the 6 station area types, “bridges,” and the overall design guidelines for all station areas because this station area is affected by all three of the current suburban situation and the 3 problems that this proposed light rail line seeks to address. First, this station area sits at the intersection of the Southern rail line and one of Gwinnett’s oldest and most troubled strips, Jimmy Carter Boulevard. Second, this area of Gwinnett County embodies the changing demographic of Gwinnett in terms of race, ethnicity, low income, and aging housing stock. Finally, within this station area there are no places, only parking lots, office parks and retail buildings left over from the Highway Era, much of which now sits vacant. Figure 61 shows the location and condition of the Jimmy Carter Station Area.

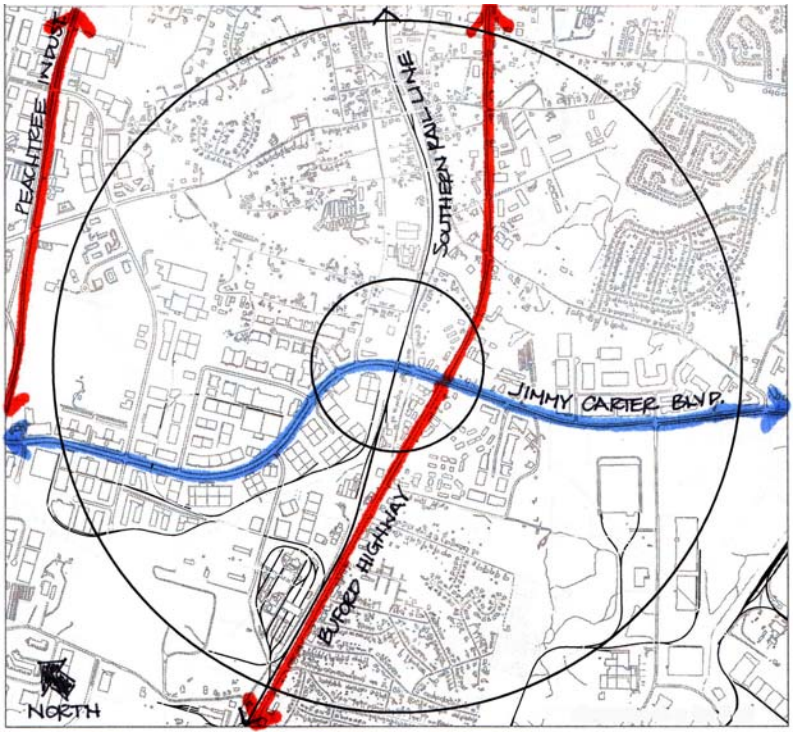


Figure 61 Jimmy Carter Station Area Location and Condition

The preliminary program for the station area was determined by the process previously described, which assumes a constant average density between 9 and 20 units per acre for each Urban Village and multiplies that by the entire land area without deducting land area for streets, parks, or civic buildings. Table 10 below compares this preliminary program to the actual density and number of housing units achieved in the illustrative design. The average densities vary in each Urban Village because contextual considerations influence the actual design in terms of adjacent development, existing roads, topography, and the location of parks, schools and other civic buildings, however the overall total number of housing units is close to the target.

Table 10
Program for Jimmy Carter Station Area

Jimmy Carter Station Area	Total Redevelopment Area (Acres)	Average Density (units per acre)	Total Housing Units
Preliminary Program			
Total Station Area	**66.7**	**17**	**1,134**
Urban Village 1	28.6	17	487
Urban Village 2	22.4	17	381
Urban Village 3	9.5	17	162
Urban Village 4	6.1	17	104
Illustrative Design Program			
Total Station Area	**66.7**	**13**	**900**
Urban Village 1	28.6	11	315
Urban Village 2	22.4	12	272
Urban Village 3	9.5	20	191
Urban Village 4	6.1	20	122

The Station Area Illustrative Plan in Figure 62 demonstrates how these units fit within small lots and blocks to form 4 walkable neighborhoods, or Urban Villages. Each Urban Village has its own small neighborhood commercial node. These nodes are connected to one another with main streets where topography allows.

The plan shows an elementary, middle and high school, and a community library dispersed throughout the 4 Urban Villages. These were placed at prominent locations to terminate streets or sit at the head of green space. The schools were placed within Urban Villages 1 and 2 because these have the most land area that could accommodate some lower density single family lots, which were located near the schools. These Urban Villages are also the most connected to existing adjacent residential and to each other; therefore, the placement of schools in these Urban Villages allows as many households as possible to walk to the schools.

The target densities were achieved using only low to mid-rise forms including single family homes, townhomes, live/work units, residential flats over retail, and apartment buildings. The tallest buildings are 6 stories, which are directly adjacent to the transit station. To achieve adequate density for safe and lively neighborhoods with less land area, Urban Villages 3 and 4 use higher density forms. Urban Villages 1 and 2 have more land area and are able to accommodate a more diverse range of building types and densities. With these densities, the overall station area can accommodate 900 units within a quarter-mile radius, or 5 minute walk, of the station. Additionally, Urban Village 1 adds an additional 250 single family units that are within a half-mile, or 10 minute walk, of the station. This land area was added to the station area to create a walkable street network between the retail node in Urban Village 1 and new infill residential development discovered just beyond the half-mile radius mark from the proposed station. Figures 63-66 and Tables 11-14 describe the design of these 4 Urban Villages in greater detail.

Figure 62 Jimmy Carter Station Area Illustrative Plan

Figure 63 Jimmy Carter Station Area – Urban Village 1 Illustrative Plan

Table 11
Program for Jimmy Carter Station Area – Urban Village 1 Illustrative Plan

Illustrative Design Program		Housing Units	Retail (SF)
Urban Village 1			
	Single Family within 1/4 mile radius	25	
	Single Family within 1/2 mile radius	250	
	Townhomes	68	
	Live/Work Units	17	
	Mixed Use Building 1 (3 stories)	60	14,000
	Mixed Use Building 2 (3 stories)	32	19,000
	Multifamily Building on Village Green (6 stories)	113	
	Existing Church and Cemetary		
	New Middle School		
	strategy: share parking with New Elementary School during the day and with adjacent office for evening events		
	New High School on Village Green		
	strategy: share parking with adjacent office park for evening and recreational events		
	Village Green		
	3 Pocket Parks with Playgrounds		
	Existing Adjacent Office Park (partially vacant)		
	strategy: redevelop portion of office park into recreational fields for adjacent high school and neighborhood use and reactivate remaining office buildings by connecting to Urban Village		

Figure 64 Jimmy Carter Station Area – Urban Village 2 Illustrative Plan

Table 12
Program for Jimmy Carter Station Area – Urban Village 2 Illustrative Plan

Illustrative Design Program		Housing Units	Retail (SF)
Urban Village 2			
	Single Family	71	
	Townhomes	80	
	Mixed Use Building 1 (3 stories)	64	13,000
	Mixed Use Building 2 (6 stories)	57	20,000
	New Elementary School		
	strategy: parking lot and playground located on adjacent blocks to break up the block size required for school. Playground also serves as pocket park for adjacent single family homes		
	Rail Station with Public Plaza		
	Additional Pocket Park to serve townhomes and multifamily		

Figure 65 Jimmy Carter Station Area – Urban Village 3 Illustrative Plan

Table 13
Program for Jimmy Carter Station Area – Urban Village 3 Illustrative Plan

Illustrative Design Program		Housing Units	Retail (SF)
Urban Village 3			
	Mixed Use Building 1 (4 stories)	63	8,000
	Mixed Use Building 2 (4 stories)	52	6,000
	Multifamily Building (6 stories)	76	

Figure 66 Jimmy Carter Station Area – Urban Village 4 Illustrative Plan

Table 14
Program for Jimmy Carter Station Area – Urban Village 4 Illustrative Plan

Illustrative Design Program		Housing Units	Retail / Office (SF)
Urban Village 4			
	Townhomes	62	
	Multifamily Building (3 stories)	60	13,000
	Corner Grocery		7,000
	Retail fronting Parking Garage		8,000
	Office Building (4 stories)		90,000
	Library		
	Park along Greenway		

IMPLEMENTATION

This proposition meets all three goals of the current Gwinnett County 20 year Comprehensive Transportation Plan, which are as follows:

1. Provide accessibility and mobility for people and goods in the county.
2. Maintain and improve the transportation system.
3. Protect and improve the environment and quality of life for the residents of the county.[150]

Accomplishing the proposed density at these locations should not be a problem. Gwinnett County leads the state of Georgia in new residential construction.[151] It is simply a matter of changing the development pattern in which these new units sit.

This transit line is an expensive proposition, but in the end it will produce a sustainable transportation infrastructure that will actually generate revenue instead of constantly needing to be widened as most highways do. The Gwinnett County Comprehensive Transportation Plan includes over $1.6 billion in transportation projects over the next 20 years.[152] Spending large sums of money on transportation projects is not new, we have just traditionally spent the money to help cars instead of people. In less than twenty years, between 1924 and 1941 when the automobile was new, 100 miles of Gwinnett's roads were paved at a cost of about $3 million, and that is in 1941 dollars.[153] Before this, paved roads did not exist, and this was also a very expensive proposition, but this did not prevent government from committing the investment for an infrastructure they believed was important for the economic future of the county and the quality of life of its people. This is not unlike the proposition of this commuter rail line.

[150] Gwinnett County Department of Transportation
[151] Gwinnett County Chamber of Commerce
[152] Gwinnett County Department of Transportation
[153] Flanigan, Vol. I, p.260, 276

The government has recently spent a significant amount of money investing in HOV lanes along I-85 through Gwinnett County, despite the fact that only 15% of Gwinnett's workers carpool to work.[154] There is a current proposal to convert these existing HOV lanes to tolls lanes in which drivers can pay to ride in the HOV lanes. The estimated cost of building these 486 miles of toll lanes throughout Atlanta is at $4.9 billion. Additionally, the state of Georgia plans to spend up to $400,000 in 2004 to do a study to see whether the HOV lanes can accommodate paid traffic.[155] If this money were devoted to investment in transit infrastructure instead, there would not be a need for such toll lanes. The tragedy of all of this wasted spending is that it will never solve the problem of congestion, because the more roads you build the more people will drive until an equilibrium condition of crowding returns. This is known as the theory of latent demand.[156] As this thesis demonstrates, cultural values are recorded in the form of infrastructure that is permanent and will be passed on to future generations. It is my belief that today's suburban culture values more than the mobility of the automobile; therefore, transportation spending should be refocused toward transit that supports walkable communities and is a better long-term investment. It is a more efficient investment as well. It takes 15 highway lanes to move as many people as one lane of rail, and spending on transit creates twice as many new jobs as highway spending.[157]

Political strategy will also be important to the implementation process. While there has been historic controversy over Gwinnett's decline of participation in taxation to support MARTA while clearly making use of the system by busing residents to its stations, there is an opportunity for regional coordination that would benefit everyone in

[154] U.S. Census 2000, SF3, Table P030
[155] Stanford
[156] Duany, p.92
[157] Duany, p.95-96

this moment of change that should not be passed up based on political grudges.[158] Politically, tying into Fulton and DeKalb County's MARTA system at the Doraville station can be justified by the fact that this new line will provide access to MARTA for portions of Fulton County not yet served by MARTA rail. Five of the proposed stations sit at the crossroads of strips that continue into Fulton County. Likewise, the proposed Gwinnett line will increase access to jobs and places for those along MARTA lines throughout DeKalb and Fulton County. Table 15 indicates logical funding partnerships for each station and corresponding infrastructure.

Table 15
Potential Funding Partnerships for Each Station Area

Station Area	Financial Partnerships to Fund Portions of Light Rail
Buford	City of Buford
Sugar Hill	City of Sugar Hill / Gwinnett County
Woodward Mill	Public-Private Partnership Private Development and Gwinnett County
Old Town Suwanee	City of Suwanee
Suwanee Station	Public-Private Partnership Private Development and City of Suwanee
Sugar Loaf	Gwinnett County
Duluth	City of Duluth
Pleasant Hill	City of Duluth / Gwinnett County
Berkeley Lake	City of Berkeley Lake / Gwinnett County
Norcross	City of Norcross
Jimmy Carter	City of Norcross / Gwinnett County

The county needs to serve as the coordinating agent to insure standardization of tracks and other equipment, as well as timing of projects. It is logical that projects should be implemented from south to north, so that transit can begin service as soon as possible, however current development momentum in areas like Suwanee and Duluth should be

[158] Although only 1% of workers used transit in 2000, it is telling that 56% of these transit riders indicated that they used rail to get to work. Since Gwinnett County has no passenger rail, it can be assumed that these riders access MARTA either in Fulton or DeKalb Counties. Source: U.S. Census 2000, SF3, Table P030

capitalized on, and possible legs of the rail line should be implemented given opportunity, connecting Duluth to Suwanee for example. Since it will take time for the entire rail line to be built out and even longer for projects within each station area to be fully completed, the county, in conjunction with each city, should follow the following process in order to insure the area will be transit ready when transit is implemented or will develop in a way that is conducive to transit ridership after the rail line is developed, so as not to counteract the investment in light rail. As Allen Jacobs points out, "the basic physical nature of most (great streets) was established in a short period, the consequence of a decision to design and build, or rebuild, a particular street…The basic design having been set, these streets are regularly amended, tinkered with, improved over time."[159]

Steps toward implementation:

1. Negotiate right of way with the railroad.
2. Abandon zoning within the ½ mile radius and replace with subdivision regulations and minimum density requirements previously described with no maximum.
3. Each station area should have participatory workshops to develop a vision for the station area, decide how to achieve densities, identify public space and public building functions, define relationships of buildings to the street and to each other, and create an illustrative master plan, which defines blocks, streets, public space and building massing.
4. Municipalities and the county should work together to implement the plan by building the light rail and working with private developers to build out proposed pieces of the master plan.

[159] Allan Jacobs, p.307

The reintroduction of rail into the four railroad towns and the developing TOD at Suwanee Station will assist these places in their current efforts to revitalize and densify; therefore, stations should be built at these locations first. Connecting these existing places to each other with light rail will create greater accessibility to support retail and office investments. Meanwhile, the half-mile radius surrounding all other stations should be rezoned to reserve the land for future transit supportive development. At each station area the rail line will be built, the master planned completed with land reserved for public buildings, open space and the transit station, so private development can occur within the city/county/public determined framework as the market allows. When enough density has been built to support a transit stop, the station can be built, and the new town will be connected to the other existing places. The park and ride station at Sugar Loaf should also be included in the initial phase, since it will contain operational facilities and will also increase ridership, increase revenue and allow station areas to implement reduced parking ratios. Table 16 outlines this phasing strategy.

Table 16
Phasing Strategy

Phase	Station
Phase I	Norcross, Duluth, Old Town Suwanee, Buford, and Suwanee Station
Phase II	Jimmy Carter and Pleasant Hill
Phase III	Berkeley Lake, Sugar Hill, and Woodward Mill

Several land use policy tools have been used in other jurisdictions that could be emulated in Gwinnett County to encourage the private development of station area plans. First, a transfer development rights program could be established, which allows land owners in designated sending areas to sell their development rights to developers wishing to develop within the station areas, which would be the receiving areas for the development rights. The purchase of development rights would permit a developer within a station area to build at higher densities than those specified thus increasing the

developer's profit. This program would lead to more intense development surrounding transit and less development creating traffic congestion elsewhere. Other possible policy incentives include temporary or long-term tax abatement for property owners within station areas and an accelerated approval process for projects within the station areas. These three policies could be used separately or in conjunction with one another.[160]

Finally, policy should be put in place to insure the continual availability of affordable housing within each of the station areas. A study by Robert Cervero found that multi-family residential projects within one quarter-mile radius of light rail stops in Santa Clara County, California were able to get 45% higher rents than comparable properties further from transit. While this is an incentive for developers to develop housing in the station areas, it is also the reason why most New Urbanist projects end up being beyond the economic reach of most people despite designers' good intentions and a mix of housing types. As long as the commodity of a true sense of place is in limited supply, the natural market can't maintain affordability without some sort of subsidy via tax incentives, density bonuses or public funding. This phenomenon of increased rents near transit was observed in commercial and for-sale housing as well, so developers may be willing to provide affordable housing in exchange for policy that allows them to build more commercial and for-sale residential.[161]

[160] Beyard, p.11
[161] Dunphy, p.6-7

APPLICATIONS AND GENERALIZATIONS

This thesis proposes the use of New Urbanism theory to create new and adapt old places in second generation suburbs in order to urbanize suburbs to accommodate a changing demographic, transition to more sustainable growth patterns, and create neighborhoods with a sense of place and quality of life. This is precisely what New Urbanism was designed to do. New Urbanist Doug Kelbaugh describes the theory in the following way. New Urbanism "aspires to a social ethic that builds new or repairs old communities, equitably mix(es) people of different income, ethnicity, race and age, and promotes civic ideal that coherently mixes land of different uses and buildings of different architectural types." New Urbanism is based in the belief that "good design can have a measurably positive effect on sense of place and community, which it holds are essential to a healthy, sustainable society."[162] The methodology of New Urbanism, which I have demonstrated in this thesis, "tries to learn and extrapolate from the most enduring architectural types, as well as the best historical examples and traditions as they intersect contemporary environmental, technological, social, economic and cultural practices" and uses "prescriptive codes rather than proscriptive zoning" to create mixed use places of human scale.[163]

While this thesis focused on Gwinnett County, Georgia as a case study, the same layers of landscape and set of current problems exist in second generation suburbs across the country. The solution of regional light rail to connect multiple centers, stimulate redevelopment, and improve the quality of suburban life can be applied to any region. Likewise, the prescribed design strategies for individual station areas can be used for any station area design by matching the existing conditions of the station area

[162] Kelbaugh. *Three Urbanisms and the Public Realm*, p.142
[163] Kelbaugh. *Three Urbanisms and the Public* Realm, p.144

with one of the five condition-based examples illustrated in this project: Crossroads, Bridge, Main Street, Town Center, or proposed TOD.

Andres Duany points out that "historically, we have rebuilt our nation every fifty to sixty years." My examination of the evolution of Gwinnett County illustrates these continual revisions. Duany suggests, "It is not too late. The choice is ours: either a society of homogeneous pieces, isolated from one another…or a society of diverse and memorable neighborhoods, organized into mutually supportive towns, cities and regions."[164] I conclude that the latter is the most appropriate next layer.

[164] Duany, p.xiv

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